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Perspective

Major General George W. Weightman

Since 1901, the distinguished contributions of our Army Nurse Corps have fully demonstrated their total commitment to achieving the highest standards of patient care and military professionalism. General Douglas MacArthur remarked "The Army nurse is the symbol to the Soldier of help and relief in his hour of direst need." Today, our Nurse Corps personnel stand on point for our nation, defending our freedom and our way of life, READY, CARING AND PROUD. This issue is focused on the many aspects of nursing care in the AMEDD in both TDA and TOE settings supporting the Global War on Terrorism. I believe that you will be impressed with the breadth and complexity of care that our great nurses are involved in and continuing their great legacy within the Army Medical Department.

There are two wonderful articles concerning Community Health Nursing. "CHN in the Army: Past, Present, and Future" by COL Hollandsworth, et al gives us a brief history of community health nurses in the Army since the 1st program in 1949. They note the growing role on deployments to include roles in CSHs and Civil Affairs units. They predict that, in the future, there will be increased role for CHN's in developing policy and integrating public health nursing into all medical plans. "CHN Principles: A Practical Application in a Tactical Setting" by MAJ Likely et al, documents many function of CHNs in the 21st CSH during an OIF deployment to include field sanitation, infection control, monitoring food and waterborne diseases, and patient education.

Continuing the TOE theme, MAJ Chang in "47th CSH: Leading the Way with Innovative Nursing in a Combat Zone," recounts several anecdotes that illustrate innovative ideas used in the 47th CSH during its OIF deployment to overcome equipment shortages in the early part of the operation. In "Ethical Issues in a CSH in Support of OIF" by CPT Connor, she details a case study involving actual trauma scenarios in Iraq involving Iraqi civilians where triage and limited resources were constant factors. She addresses the inherent conflict between the military mission of enhancing readiness and the Geneva Convention (treat all patients equally regardless of race, gender, nationality, etc.). She points out the importance of discussing these situations after critical episodes of care and its role in helping to maintain the mental health of healthcare personnel. "Mental Health Services at FOB Abu Ghraib" by CPT Goke and 1LT De La Rosa, provides us with a great description of the provision of mental health services provided at Abu Ghraib to US (guards and interrogators) and detainee personnel and some of the unique issues (cultural, military, etc)that were dealt with. It emphasizes the value added of this support.

"Depicting Quality Nursing Care and Staffing Effectiveness" by Loan, et al explains the construct and purpose of the Military Nursing Outcomes Database (MILNOD) Project to better determine nursing staffing needs and chart nursing performance outcomes. In "Designing a Medical Humanitarian Assistance Course for Advanced Practice Nurses in the Uniformed Services," MAJ Aberle, et al describes the evolution, design, format, and implementation of the course as APNs seek to define their role and their missions. In "Keys to Success in Training 91Ws" by LTC Knox and COL Lamar, we get a description of the 91W sustainment/transition training challenges in the South Carolina ARNG.

We have two excellent articles involving Case Management and nurses. "Rebuilding a Future: A Soldier Readiness Case Management Program" by LTC Bingham, et al gives us an in-depth look at the program that was developed to meet the needs of MAMC and Soldiers preparing for, returning from, and recovering from war deployments. This program was a model for the CBHCO program that was

started in January 2004. They do an excellent job of detailing the leadership, administrative, and emotional challenges that were confronted. "Design and Development of a Case Management System for Reserve Component Personnel" by COL Swanson, et al describes the story of 31 Reserve ANC's mobilized to help with setting up a case management system. It lists the 6 major goals of setting up their initial system.

Finally, "West Nile Surveillance at US Military Installation During 2003 and 2004" by LTC Debboun, et al provides us with a good primer on West Nile Virus which was first identified in the US in 1999 in New York and spread to California by 2003. He then recounts CHPPM's role in providing lab support of the surveillance effort. It is interesting to note that, as of 2004, WNV had been detected in all States except Alaska and Hawaii.

All in all, this is another very interesting issue that I hope you will all take the time to read. There is a broad variety of content and I'm sure you all will be as impressed as I was with what our great AMEDD Soldiers are doing every day!

Army Nurses: Providing Quality Health Care Whenever and Wherever Needed

Major General Gale S. Pollock

(MG Pollock is Chief, Army Nurse Corps and the Commander, Pacific Regional Medical Command and Tripler Army Medical Center)

It is a pleasure for Army Nurses to contribute to this special edition of the AMEDD Journal. We hope to expand your awareness of how professional nurses contribute to the health and care of our Service members, retirees, and family members.

Without a doubt, Army Nurses are key contributors to maximizing health through the provision of high quality care. This is true no matter where that care is needed—on the battlefield, in an ambulatory setting, or bedside. These nurses are recognized across the United States for their commitment to the pursuit of excellence in clinical practice, education, research, and leadership. You will read about each of these four components in this edition of the Journal.

First, the focus of nursing is clinical excellence. The diversity of clinical and educational talents of nurses is reflected in the multitude of areas in which they contribute. When health care focused on the in-patient area, no one questioned the key roles of nursing. Their skills in coordinating and facilitating care, treatments, communication, and excellence in educating the patient and family were well known. However, recognition of these key contributions of professional nursing in the ambulatory model was slow to occur. A major contribution of Army Nurses today is in the clarification of the importance of serving as care coordinators and educators in ambulatory care. Their increased utilization as nurse case managers and patient educators is an essential contributor to improved health outcomes for those with chronic disease or injury. These talented nurses are making a huge difference in the care of our wounded warriors as we strive to return them to their maximal level of functioning.

Second, Army Nursing is committed to continuous education and learning. They ensure that as new information becomes available and new avenues of care open, it is rapidly incorporated into clinical care, administration, and mentoring of junior staff. Army Nurses hold essential roles in administration/management and are accountable for strategic, operational, and/or management outcomes in all health care delivery settings. As active partners in military healthcare, their willingness to individualize the care of patients and optimize organizational processes is paramount to our success in these demanding and rapidly changing times.

Third, nursing research is growing exponentially in the profession of nursing. Army Nurse researchers' efforts include deployment health, developing and sustaining competencies, recruitment and retention of the work force, clinical resource management, and military clinical practice and outcomes management. Their work has resulted in partnerships for collaborative research among services, components, institutions, disciplines, and agencies. The researchers' excitement and enthusiasm for improving the health and well-being of our beneficiaries and the methods to educate and motivate individuals to fully participate in maintaining their own health is extremely contagious—and everyone benefits from their efforts.

Finally, through various tasks and challenges, Army Nurses across the world are utilizing their leadership talents in all venues. They demonstrate willingness to teach, mentor, and facilitate the growth and development of all members of the health care team and our beneficiaries.

I hope you enjoy this edition of the AMEDD Journal and appreciate the contributions to clinical excellence, education, research, and leadership of your Army Nurse colleagues as they contribute to the best health care in the world for the men and women who defend our freedoms.

Rebuilding a Future: A Soldier Readiness Case Management Program

LTC Mona O. Bingham, AN, USA†
Dr John G. Meyer††
Pamela S. Birgenheier†††

Introduction

The value of the Army Medical Department is found in the faces and lives of the Soldiers we serve and their families. They are the reason for our existence and provide the meaning for our work. Therefore, not surprisingly, this article was inspired by Soldiers - Soldiers returning to the Pacific Northwest from deployments in support of the Global War On Terrorism.

> *He found his way to us in Mar 03, evacuated home with a torn meniscus. He needed crutches, a consult, surgery, physical therapy, and rehabilitation. The case was simple and straightforward. Except the additional information he slowly gave me, added a new dimension that we would see time and time again, complicating the equations of medical care for every Soldier entering our area. He had just arrived and was still jet-and-war lagged. He tried to use the ATM machine and it rejected his card. He tried to call his wife and discovered the phone was disconnected. He frantically called his parents to share his fear and to get their help to find his children. Only then, minutes before he entered my office, did he learn that his world here was exploding as much as the one he had just left. His wife had left, taken all the money and his children with no forwarding information and no message for him. His home was 1,000 miles and 2 states away. . . Suddenly he needed a lot more than a consult downstairs and a bed to wait for the system to work him in for surgery. I knew he needed to be home – now, and he needed that more than any medical care I could assist him with.*

Operation Enduring Freedom, Operation Iraqi Freedom (OIF), and Operation Nobel Eagle (ONE) required the activation of large numbers of Army National Guard (ARNG) and U.S. Army Reserve (USAR). As these mobilized units moved through the Soldier Readiness Processing (SRP), injuries and conditions were found in some of these Soldiers that required resolution before being released back to their unit or sent on to theater of operation. When the troops who did deploy began to return home, many of these Soldiers were identified during the demobilization process as needing additional evaluation for medical conditions and/or injuries before being released to return home and/or their Guard or Reserve unit. Additionally, all Soldiers who were sent home by medical evaluation due to illness or injuries often required on-going health care and/or further evaluation without long-term hospitalizations. An immediate challenge surfaced: how to house and manage the follow up care of these Soldiers. New approaches to care management and creative answers to the housing and command and control of these citizen Soldiers were required.

The purpose of this article is to describe the Madigan Army Medical Center (MAMC) case management response that was developed to meet the functional needs of the military medical organization and the unique needs of Soldiers preparing for, returning from, and recovering from war deployments. This article shares the process behind the development of the program through the stories from the Case Managers of the individual Soldier -- the center of care and the inspiration of hope.

MAMC Case Management Mission Response Transition

The first Medical Evacuation patients began to trickle into MAMC shortly after Valentine's Day 2003. Initially, care for these Soldiers was provided through the two Health Outcomes Management Evaluation Case Managers who quickly became overwhelmed with the needs and volume of care required. "Team Lewis" was established as a consortium of MAMC case managers, social workers, and Fort Lewis Garrison Holding Company (MED HOLDOVER) who provided command and control. By Jun 03, there were more than 200 ARNG and USAR Soldiers identified as requiring further evaluation before being deployed. It was clear that policy changes were needed to meet the clinical, administrative, and command/control business processes and the new case management mission of ARNG and USAR Soldiers on active duty.

Two USAR nurse Case Managers were deployed to MAMC to assist the two existing Case Managers with this increasing MED HOLDOVER workload, and by August of 2003, these four Case Managers and one administrative support staff person were averaging 150 patient visits per week. This work, in early 2003, established the business processes for what would be known as the Soldier Readiness Case Management Program (SRCMP). The mission of the SRCMP was and

continues to be:

Promoting the return of the Soldier to his or her unit in a deployable status as rapidly as possible

Assuring rapid and thorough evaluation of Soldiers identified as needing further medical care

Monitoring the care and progress of the Soldier throughout their evaluation(s)

Identifying and arranging for extended care (if required) to be provided as close to the Soldier's home as possible

Providing a "safe" environment, physically and emotionally, for the Soldier

Providing a personal Case Manager dedicated to the Soldier's well being to serve as the Soldier's advocate

Remote Care

In the early days of the war, all returning Soldiers who required continued care were assigned to the MAMC Medical Hold (MED HOLD) for command/control and housing. The requirement to rapidly evaluate an increasing number of Soldiers placed a greater workload on the AMEDD and began to force new policy and access standards, resource requirements, and clinical business processes. The remote care program helped get Soldiers home faster and also helped to alleviate the housing shortages experienced by military posts with the increased volume of Soldiers needing medical care.

As early as Feb 03, Team Lewis began placing Soldiers who required ongoing care on "remote care" status, meaning care was to be received as close to the Soldier's home as possible and case managed by the MAMC SRCMP who coordinated all aspects of their medical care with weekly phone calls to track the Soldier's progress. Patients whose care was considered complex were given priority to receive remote care with the philosophy that support available with family and home environment promoted quicker healing.

A critical requirement for remote care was that Soldiers had to be attached to a Title 10 Military Function Unit located near the Soldier's home so the Soldier could physically report for duty when not undergoing medical care. This requirement was a barrier to large numbers of Soldiers. Criteria for going home on remote care included:

- Medical treatment plan projected out 4 or more weeks
- Medical care able to be coordinated within quality of care and appointing standards using other military treatment facilities, Veterans Administration (VA) hospitals, and local TRICARE providers
- No pending legal or administrative actions against the Soldier
- Medical release obtained from medical facility provider

The Team Lewis Remote Care Program was very successful. As the larger military community heard of this push for remote care, other medical treatment facilities began to call requesting to have their Soldiers transferred to Fort Lewis in order to get care closer to home. The program was also extremely popular with Soldiers and families. Only 2% of Soldiers who entered the Team Lewis Remote Care Program had to be disenrolled and brought back to MAMC for medical noncompliance or administrative issues.

National Attention

In response to the Fort Stewart ARNG and USAR housing problems exposed by the press in Oct 03, Fort Lewis formalized the Remote Care Program with protocols agreed by senior level commanders. The adverse publicity from the Fort Stewart incident brought intense scrutiny and policies from Department of Defense (DOD) for housing and care access standards. One significant policy stated that nondeployable Soldiers could be released from active duty within 25 days of mobilization. Prior to this, Soldiers who were mobilized and found to have medical problems at SRP were placed in Fort Lewis MED HOLDOVER or MAMC MED HOLD until medical evaluations and care could be completed. This change compressed the time requirements for completion of all medical evaluations to 25 days to determine if the Soldier was deployable or needed to be sent home.

By Oct 03, the MAMC SRCMP clinical business processes (on site and remote care) had been established, rudimentary data were being captured locally, and command/control and housing for ARNG and USAR were firmly established within Fort Lewis. October 2003 marks the point of transition from individual facilities meeting mission requirements using local interpretation of policy to the creation of an Army program with the highest level of interest. The outcomes of the SRCMP gained visibility of the Office of The Surgeon General who requested web based data from all facilities providing case management services to OIF Soldiers to enhance the rapid flow of information.

From 1 Mar to 26 Nov 03, MAMC SRCMP managed 724 Soldiers and almost half of these were assigned to MED HOLDOVER/MED HOLD living on Fort Lewis. In Nov 03, 18 were in the Remote Care Program and 27 on convalescent leave waiting for temporary change of station orders to Remote Care. The SRCMP added four civilian Case Managers and six USAR Case Managers Sep 03 to Jan 04, expanding the staff from 4 to

15 in 6 months. This increase in staffing allowed more remote care and focus on those Soldiers who had been in MED HOLDOVER or MED HOLD status for long periods of time without close monitoring.

Even with these resource increases, all working estimates indicated that demand was going to exceed the MEDCOM MED HOLDOVER capacity and an alternative to on-post housing was needed. The Community Based Health Care Organization (CBHCO) was created in Jan 04 after the National Guard offered assets to help manage medical holdovers "at home." The CBHCO, modeled after the Team Lewis Remote Care Program, provided administrative command/control and continued case management at a site near the Soldiers' homes but off-post.

The CBHCO provided more available resources to serve medical holdover Soldiers and used other federal (VA and other branches of military service) and civilian TRICARE facilities. Remote commands were set up in various states staffed with administrative, medical, and nursing personnel (activated USAR) to coordinate all aspects of Soldier care/readiness. The first CBHCO was operational Apr 04 in Florida, directed by FORSCOM, followed closely with the May 04 California CBHCO opening. Initial training of new CBHCO staff was provided by Team Lewis, the most experienced and successful in this remote care work. All 50 states are now covered by CBHCO.

Today, the SRCMP at MAMC has expanded to a staff of 22 and continues the medical management of all Soldiers prior to deployment, during deployment, and after deployment. The numbers and pictured workload on Figures 1 and 2 show the tremendous work to prepare and keep Soldiers ready for war.

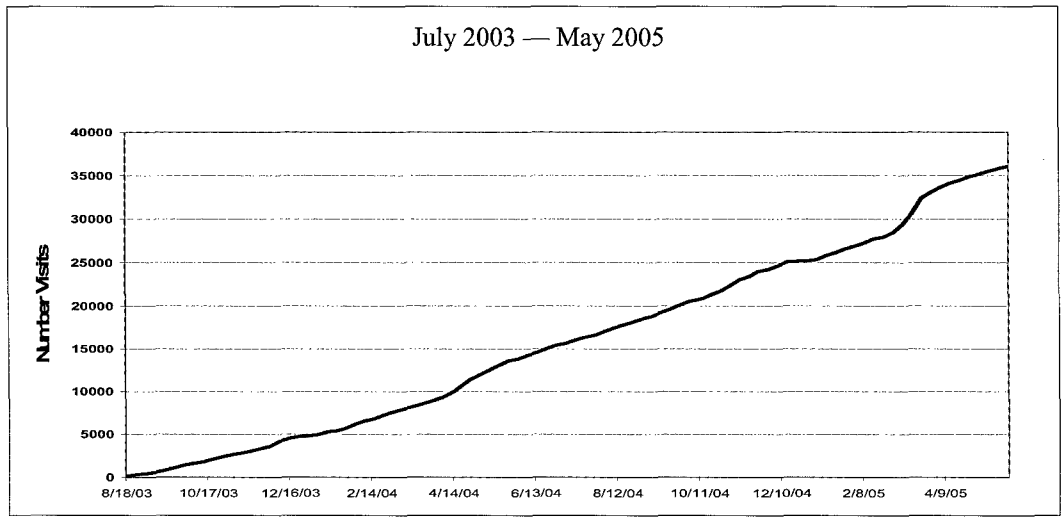

Fig 1. Cumulative total visits by SRP and Med Hold Soldiers by Soldier readiness case management.

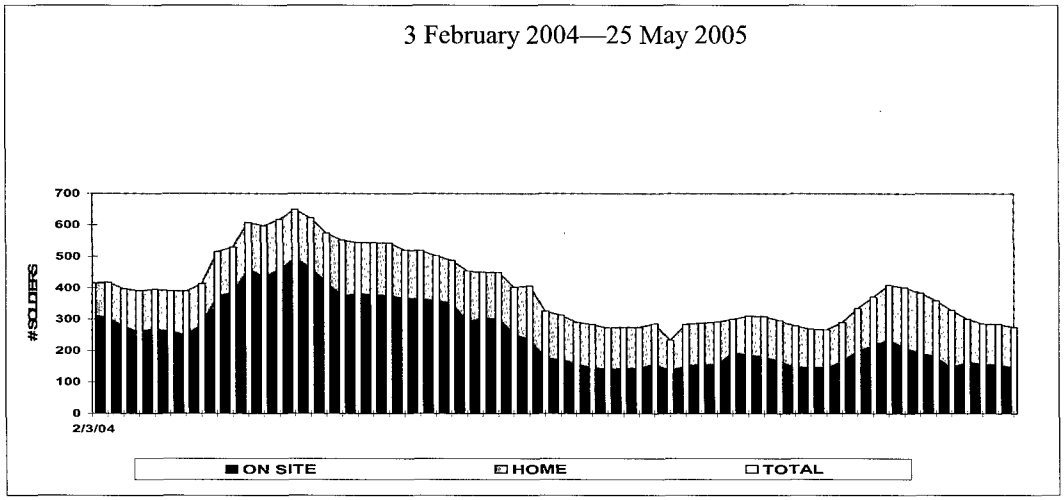

Fig 2. Team Lewis Med Holdover COHORTS.

But numbers can't convey all the challenges that these Case Managers face every day. The rest of this article shares their stories.

Case Management for Soldier Readiness

There are three populations of Soldiers requiring medical case management and three broad categories - those with a variety of administrative issues (for example, medical boards), those with injuries, and those with illnesses – before, during, and after deployment to a war zone.

Mobilization Process

During the mobilization or pre-deployment phase, all Soldiers go through SRP. As part of this process, Soldiers are screened for any current health conditions and then seen by medical health care providers (physicians, physician assistants, or nurse practitioners) who triage Soldiers to primary or specialty care clinics as indicated. The main goal of all clinic visits during pre-deployment screenings is to determine if Soldiers are able to perform their Military Occupational Specialty (MOS) and to identify any limitations to performing their job [MOS]. All Soldiers given medical referrals go through the SRCMP to insure the appropriate consults have been sent and that any ordered laboratory tests or x-rays are completed. The Soldier is then given "a priority pass" for same day appointments in the clinic, with instructions to the provider as to what medical evaluation is needed. Once the appointments are completed, the Soldier returns to the SRCMP office where medical notes are reviewed to ensure all issues have been addressed. When Soldiers have completed all necessary medical appointments, they return to the SRP site to either finish the deployment process or be released from active duty and returned home to address any health conditions. The SRP referral list is reviewed by both administrative SRP staff and SRCMP staff on a daily basis to track Soldiers until they are cleared. This checks and balance system helps to control the number of Soldiers failing to make appointments or return to the SRP site after completing appointments and helps commanders to meet their unit deployment timeline.

Demobilization Process

The process for demobilization is similar to that of mobilization with some additional requirements including that all Soldiers receive a "line of duty" designation for any illnesses or injuries incurred while on active duty or deployed. If the "line of duty" paperwork was not completed in theater, it will be completed for them at the SRP site or at the SRCMP. Time is a critical component of the demobilization health care process. Providers make recommendations for what health care is needed and appropriate referrals are made. Soldiers have the option to obtain health care using their TRICARE benefit or using the VA health care system. When a service member is deployed to a combat area they are eligible for 2 years of VA priority health care. As part of the Seamless Transition Program with the VA, Soldiers who have medical conditions that do not warrant medical holdover status are still encouraged to complete a VA referral. A signed release of information document is reviewed by their Case Manager who will also attach any medical documents or referrals. Completing this VA referral paperwork prior to discharge from active duty allows the Soldier to enter the VA system without a lengthy wait to verify eligibility later, if and when the Soldier needs health care. The VA benefit counselors are co-located with the SRCMP on the 8th Floor at MAMC as part of the VA/DOD partnership and are always available for questions and issues concerning the Seamless Transition Program.

He was lucky to be alive; there was extra metal on the bottom of the Humvee, but still, both feet were crushed from a bomb in Iraq. I remember how angry he was, of course. He was only 21- years-old and he had lost both his feet. He was only here for 2 weeks and I was trying to help him make decisions. Did he want to go home and be followed by a civilian facility or did he want to go to BAMC and get the complete treatment in the military system – therapy, counseling, artificial limbs? He was so angry and I knew he just couldn't weigh the pros and cons of each choice. I got him in to see our VA representatives and within days they got him a wheel chair, a car, and an appointment for further handicapped evaluation. When we sat down the next week, he was a different person and he told me "I just felt lost, and you helped find me a path to hope." He left for BAMC the next day and now I'm working with him and his family for his long-term needs after BAMC when he returns to Oregon.

Medical Evacuation

The SRCMP staff are always on call and are notified for all medical evacuations routed to MAMC. A Case Manager is present to meet all incoming medical evacuations to welcome home the Soldier and any accompanying family members. The Case Manager also receives reports from the medical flight staff and assumes responsibility for any narcotics/medications. Once cleared from the flight line, the Soldiers are taken to the emergency department where they are greeted by command staff and welcomed home. They are screened either for inpatient admission or care in the outpatient clinics and the Case Manager ensures that all appropriate consults have been written. The goal of the SRCMP is to escort these returning Soldiers who do not need inpatient admission to their first clinic appointments and assist them in transitioning to the hospital system. These

Soldiers wear a badge identifying them as a returning combat Soldier who is eligible for priority outpatient management.

The routine workload of MAMC, like most of the AMEDD, has not decreased with combat deployments and, in fact, has increased with ARNG and USAR Soldiers and families. The added workload from the high percentage of re-mobilizing Soldiers who require timely medical evaluations cannot be absorbed as extra patients in an already overtaxed medical system. MAMC has established dedicated providers in several high traffic clinics such as Family Medicine, Internal Medicine, and Orthopedic to provide immediate care for these Soldiers on a "same day" basis and similar processes in smaller clinics to ensure priority care.

Soldiers who are identified as needing more than a one time evaluation appointment are assigned to medical hold, either MED HOLDOVER or MED HOLD. They begin administrative in-processing and are assigned to a platoon. They return to SRCMP within 72 hours, receive a formal case number, Case Manager, and initial interview. During this initial interview, Case Managers begin a plan of care, estimate the Soldier's length of stay, and try to determine where care will be provided -- CBHCO, MAMC or another health care system or military treatment facility. Medical Retention Processing (MRP) is necessary for Soldiers who require care greater than 60 days or currently have orders that are less than 45 days. The MRP will take Soldiers off mobilization orders and assign them to MED HOLDOVER or MED HOLD. The MRP was designed to allow units to backfill critical positions by taking Soldiers who needed extended medical care out of the unit. The process is also beneficial to ensure there are no breaks in orders that would impact pay issues.

I had a Soldier today that I had to tell he was going to be in Medical Hold and he didn't want to hear it. But even more, he didn't want to accept that his physical health was such that he really needed to be there. He wanted to be healthy – no, I don't think he was even thinking about that. He just wanted to go home, and was trying to hide his injuries and pain and give up medical benefits completely. He just kept fighting all my attempts to work with him to get his medical needs taken care of. Finally, his shoulders fell with hopelessness as he accepted that I wasn't going to let him leave in pain with such injuries. It's so hard to watch. I tried to explain that our goal was to get a care plan that works and will ultimately get him home with his family, because "we know that's where you need to be and want to be. "It seemed like it was one motion as he looked at me and then dropped his face into his hands and began sobbing. "Yes, I need to be home and you're the first one who's said that to me. Thank you."

The Case Manager's Initial Interview

The initial interview includes the baseline assessment, the formal work of the case management practice to identify key needs and issues and develop a treatment plan. The assessment process is always intertwined with just talking and often doesn't require a complicated deep interview because the Soldier's needs are often right at the surface and "hit us right in the face," reports one Soldier Readiness Case Manager. Often it is this initial interview that cements the special relationship Soldier Readiness Case Managers report time and time again with the Soldiers. What is this special relationship? It is a combination of variables that differentiate the Soldier Readiness Case Manager's job from most civilian Case Managers. It is intensified by the direct interaction of personal face to face visits. Some Case Managers in the civilian community see patients on occasion, but a large percentage of their work and follow-up occurs through phone calls. The environment of the MAMC SRCMP on the 8th floor is a hallway of chairs and couches with sitting and standing Soldiers drinking coffee and conversing among themselves as they wait to see their personal Case Managers. Ask Soldiers to describe their relationship with their Soldier Readiness Case Manager and you'll hear words like benefits counselor, ombudsman, confidant, problem solver, parent, mentor, and friend.

The normal routine intake interview between a Soldier and their Case Manager is never routine and not normal at all. Soldiers react and respond to questions so unexpectedly. The direction of the interview can change within a moment and always uncovers many surprises, changing the focus of this initial encounter and establishing an unexpected "professional intimacy." This professional intimacy bridges that role of counselor and friend as the Case Manager become the Soldier's anchor providing the first and only safe place many have known in a year. This nurse-patient relationship is built on caring, trust, and respect.

He had just arrived on a Med-Evac and when he came into my office, I could see he had multiple injuries. What struck me most as he politely sat down was his calm and quiet demeanor -- so unassuming. I reached for some paperwork to begin his intake interview and commented on his arrival by Med-Evac saying, "I bet you really have some stories from this experience, don't you?" He didn't reply verbally; simply stood up, reached in his pocket, and then leaned over to me as he placed an object in my hand. It was his purple heart, and the first one I had ever seen. He quietly said "I just got it this morning."

The Challenges

Sometimes quickly and sometimes much more slowly,

each Soldier's story begins to emerge and the surprises never stop. Personal interviews conducted with these Case Managers uncovered many challenges, some of which were expected and some never were.

Logically, we knew that this was a going to be somewhat different than what any of us had done as Case Managers before, but still . . . we just couldn't appreciate the complexity completely until we had lived it for a while.

The unique military environment, wartime demands, and Soldier characteristics cannot be adequately addressed with the current case management models. This new job was created out of need and there was no historical reference for the needs of the ARNG and USAR Soldiers. Case management as currently being done, didn't exist before. These "week-end warriors" fall into every category of race, educational level, socio-economics, and family status. The Case Manager must be aware of the needs and circumstances of Soldiers who have lost significant income while on active duty and are anxious to quickly return to their civilian businesses and occupations and those other Soldiers who have no job or home to return to at all.

The Case Manager struggles to keep up with all the medical issues compounded by personalities and nuances of multiple providers and health care organizations within the AMEDD and outside our medical system. For example, a Navy Reserve patient who either deployed out of Fort Lewis or lives in the Pacific Northwest may be seen by multiple services at MAMC, then begin outpatient treatment at a Naval base, be working other medical issues with the VA, and need specialty care from civilian providers near his or her home. He or she needs help to navigate all those systems for the services and follow-up care needed.

The Case Manager is not responsible for ensuring that the military requirements of a Soldier's status for duty, profile, or medical board are adequately assessed. But the burden to coordinate and advocate for the Soldier's timely review and needs always falls on the Case Manager. Similarly, command and control issues remain with the responsible unit but the Case Manager becomes invaluable to both protect the Soldier needing to be released from unit work and to ensure that medical care is not being used as an excuse to flee military responsibilities. The challenge of on-going communication with both the Soldier and unit requires monitoring and conversing with unit leaders to help maintain the integrity of the unit and the health care organization.

One of the most difficult challenges faced by Soldier Readiness Case Managers is the battle between conflicting goals of the organization (Army or MAMC) and the individual Soldier. Case Managers are often forced to make decisions in the best interests of the military organization which may seem to be in conflict with the individual Soldier and his or her family goals.

There was a Soldier who was already on the liver transplant list but hid this information during the SRP. His rationale was that he didn't think he was going to survive the transplant anyway and he would rather die in combat than from liver failure knowing that his family would receive more benefits with his active duty military death. What do you say to a Soldier like that?

Other aspects of the military challenge include sorting out differences in benefit packages that are sometimes hard to interpret and often change. These shifting rules bring changes in law and procedures, often designed to benefit the Soldier more but confusing to interpret and explain. Soldiers always require help to fill out forms, interpret regulations, and proceed through the overall process. The paperwork and documentation requirements are very cumbersome processes. Another challenge that adds to the human stress component is the enormous ebb and flow in Soldier visits based on troop movements to and from theater, impacting the Case Managers' workload and the function of many of the supporting clinics and providers throughout the medical center.

And just when a slow week can lure us into a more relaxed state, something happens that reminds us of the awesome responsibility of always seeing the big picture and keeping all the details in order to prevent any one Soldier from falling through the cracks. Do we succeed? Not always and that imperfection, that error, isn't just a mistake -- it's a Soldier's life and health.

The Price of Caring with Compassion

Nursing is the type of profession that always demands more. In surveys, reports, testimonials, and interviews, it is the combination of challenging science, clinical excellence, and human connection that provides the lure into the profession and the hook to keep nurses coming back to care for patients. This intensity comprised of constant emotional and physical demands day after day, when the work environment seems to always portray a sense of urgency, also generates overwhelming fatigue. A fatigue that is absorbing, encompassing and leads to unexplainable exhaustion.

I go home tired, but I can't explain to anyone why that is. How can I explain something I don't understand myself? I've worked in clinical nursing and been on my feet for long shifts and I go home exhausted and just sleep. But this, I'm not physically exhausted and yet I have no energy for anything and, often, I can't sleep.

Some Soldier Readiness Case Managers describe their job as a constant shifting of workload demands. The sense of urgency never goes away because one Soldier is replaced with another. When the halls are quiet and the sheer numbers of Soldiers have dwindled, the challenge of "working the system" really begins. The phone calls to doctors, specialists, commanders, unit personnel, finance, VA, family members, and supervisors consume so much time. And even during these "down times," the slower pace moments only remind the Case Managers of the instability of their job with fluctuating workload demands. In other words, there is no normal day and no way to anticipate what to expect. The unknown becomes the norm.

What is the impact on staff when nothing is ever easy and when there is never any "true down time"? It's hard to begin to rest and recover when every story, every situation, seems incredible, staggering, and inconceivable.

Sometimes there is a line when we unlock the doors at 0630 and it seems to never end. There are days when the numbers, the physical presence, the smell of sweat and combat boots is stifling. There are days when you can't help but run into someone as you leave your office or enter it. And yeah, there are times when the hallways are empty. Isn't it weird that the emptiness feels haunting after the overflowing days? It's just hard to explain.

There are many emotions that Soldier Readiness Case Managers struggle with at one time or another. Many of the Soldiers receiving care can be described as frustrated, angry, and resentful – but these same emotions are part of the roller coaster ride of the Case Managers seeing these Soldiers. It is impossible not to feel frustration with the numerous system barriers that seem like pop-up barricades in the path to help Soldiers. There is frustration with "management" for not always being available, for not having the answer fast enough, for not recognizing the Case Managers' struggles at getting orders written and moving Soldiers through the system. There is a frustration at the constant pile of paperwork that just never ends and then a different frustration at the lack of having the paperwork and all the right forms to complete a process or encounter.

I get frustrated and I don't know what it means to say "it's all management's fault". Who is management? Is it my boss, or more senior military leaders? Or is it congress then, making these rules? If so, then it just comes back to all of us, right? And then you realize that blaming something on "management" is just feeling or knowing there might not be an answer or change possible.

There are some Soldiers who do seem to try to sabotage their care plan with little (or large) mistruths and missed appointments. Of course, these missed appointments were the most difficult to schedule initially and were sometimes impossible to reschedule. It is easy for the Soldier Readiness Case Managers to begin to replace the frustration with resentment and anger that the Soldier doesn't appreciate all the energy it takes to help them. The Case Managers may begin to feel that the Soldiers only want what they can't have.

When Soldiers respond in manipulative ways, Case Managers often feel this frustration, resentment, and anger. And, sometimes, they begin to take things too personally and can start to feel other emotions like hurt and disappointment. It would be easier if they could just laugh at all the repetitive words they hear from these manipulative (Soldier) actors like *"Yeah but . . .; But I didn't know . . .; Oh by the way . . .; I think I deserve . . .; I just won't leave until . . ."* Unfortunately, it is difficult to remain positive when a Case Manager may feel like he or she has worked so hard and Soldiers seem to abuse their trust, support, and attempts to help. It is evident that Case Managers are struggling with more unhealthy responses when they voice feelings of hopelessness and depression.

The ugly part of the job is when we find Soldiers lying to us or even worse, actually threatening us, then you (we) question the worth of humanity and why am I even trying? Ironic, isn't it - because it is the war horrors that they have seen that probably causes their threatening response to us - they may really have lost their connection to humanity.

Sometimes, and luckily it is the rare event, Soldier Readiness Case Managers express fear and anxiety for their own physical well-being with lingering thoughts of how some Soldiers fit the profile for violence in the workplace. There is a fear that to ignore these doubts encourages complacency instead of therapeutic confrontation.

Burnout and compassion fatigue have been visible topics in the post-war care of Soldiers. Educational offerings abound in the civilian community and are beginning to emerge within the military.[1] But knowing definitions may not be enough to avoid having the symptoms and feeling the constant struggle. Soldier Readiness Case Managers battle the fine line between empathy and the ability to keep things (and Soldiers) at arms length.

It is hard to estimate which emotion carries the highest cost for Case Managers. The two that seem especially difficult and bring longer term emotional turmoil and scars are pain and guilt. Soldier Readiness Case Managers do feel pain and guilt when they've checked all the boxes, done their job, and yet know,

they can't fix the real problem. Yes - they will admit they probably become too emotionally attached. But sometimes we see the opposite problem - when they recognize they are outside looking at a scenario from a dramatic play and unconsciously find they are thinking of how glad they are that this isn't their son or daughter or family crisis. Unfortunately, this sudden thankful thought brings guilt for feeling that way.

Pain is knowing you've done all you can – that a Soldier is ready to be released back to their unit because they've achieved the maximum gains from on-site medical care and yet they aren't "fixed" and have no job to return to.

One of the flight nurses that I've worked with for several medical evacuations came off the plane as I waited for the Soldier's arrival. She always tells me who is accompanying the Soldier or where the family will be and how to notify them. As she started to give me a full report, her voice cracked and she said "You know I bring these guys back every day and I see a lot of things but I'm not used to seeing elderly parents who have flown to Germany to accompany a Soldier home. This is such a different Army today with Soldiers like this who are 50 and have parents in their 70s." The father needs his own prostate surgery but delayed it to come and attend to his son. I think this war has changed my life, but look at what it's done to these folks, this family."

Proactive Leadership

When it became apparent that the SRCMP workload was needed and would continue to grow, senior leadership at MAMC began a systematic analysis of the business processes of case management services. The decision was made to provide counseling and case management services near but not integrated into the MAMC outpatient clinical setting. The 8th floor of the Nursing Tower of MAMC was chosen as the delivery platform; it was away from the noise and daily commotion of the hospital and clinics, the floor was carpeted, had attractive furniture, beautiful views of Mt Rainier, and its architecture was conducive to handle the large number of Soldiers anticipated.

All Case Managers were to be provided a computer and printer within their office and access to the MAMC electronic medical record known as Integrated Clinical Data Base (ICDB). The ICDB allows Team Lewis members located on the MAMC campus to monitor the care of each Soldier from their desks. All providers and visits, medications, procedures, lab and X-ray results (in longitudinal format), and admissions to MAMC are available in real time basis. Two Case Managers would occupy one room thus minimizing the potential for Case Managers to be subjected to verbal and/or physical abuse; a lesson learned the hard way in the early days of the SRCMP.

By the fall of 2004, Case Managers were providing an average of 300-400 visits per week. When a brigade would deploy, visits would increase to 900 per week. The Division leadership became increasingly concerned about staff "burn out" and exhaustion. Staff was encouraged to take leave in between these "pushes" of large numbers. It was evident, however, that staff members were becoming uncomfortable with the workload, physical and emotional demands, and perceived lack of relief.

Several approaches were initiated to counteract the manifestations of stress/depression. These included (a) support staff for Case Managers; (b) early emotional support and intervention; (c) flexible scheduling; (d) training in adjustment skills; and (e) adding more Case Managers to keep Soldier to Case Manager ratio less than 50:1.

Support Staff

The initial two person support staff for the SRCMP eventually tripled in size to provide more overall program and individual Case Manager support. Four of these individuals work at the central intake area and assist with intake interviews (nonclinical information), clinic visit coordination, database management and update, and overall availability to support Case Managers with the administrative requirements of helping Soldiers through the system. The other two support staff members were assigned to assist four Case Managers in an experiment to see if a "special assistant" for specific Case Managers would increase the efficiency of the case mangers and provide relief for the nonpatient care requirements. Both support efforts have been effective and have been incorporated into the business process.

Early Emotional Support and Intervention

The Director and Deputy Director established and promoted an open door policy. It has been used frequently and continues to be a valuable tool in providing an outlet to frustration and friction for SRCMP employees. Division leadership established a depression and anxiety awareness program for staff. Depression and stress inventory questionnaires were placed on each staff member's computer screen. Training on how to score the surveys, what scores meant, and recommended actions was provided by the Division's psychiatrist. Each staff member was encouraged to use the questionnaires with their Soldiers/patients when they felt it was warranted. However, the emphasis was placed on each of the staff taking their own test weekly and keeping a diary of the scores. Staff members were encouraged to talk with the

Division psychiatrist at any time and he would assist them with stress management and further care if they desired. All of these services were provided without management involvement and anonymity has been critical.

Flexible Scheduling and Training

Flexible scheduling attempted to address the challenges faced by Case Managers outside the office. It has been well received and continues to be a critical tool in decreasing stress. Handling post-deployment issues of adjustment for Soldiers and families requires training and a set of skills. Having a strategy and knowing how to deal with these issues help to decrease stress for the Case Managers.

Keeping Case Manager Ratio Less than 50:1

The stress level can quickly rise when the ratio of Soldiers to Case Managers goes over 50:1. The situation requires close assessment and the use of many different coping methods. A lesson learned is that there is great variation in how many Soldiers the individual Case Manager can accommodate comfortably. Some are uncomfortable at 35:1 whereas others are very comfortable at 100:1. Degree of patient complexity, AD vs ARNG vs USAR, length of time in MED HOLDOVER, extent of emotional overlay, Soldier expectations, no job to go back to, etc, must be considered when settling on a ratio to use in basic business processes. Experience to date shows very few Soldiers require a large part of the Case Manager's day.

Lessons Learned

Reflection by senior leadership and by the Case Managers reveals a number of lessons that are important to share as this work continues and expands to other military facilities. The experiences and accounts from traumatic events such as war and conflicts conveyed in research, personal diaries, formal interviews, and individual stories provide a roadmap for future planning to document the successes and learn from the mistakes. This new case management process resulting from our mobilization, demobilization, and medical evacuation encounters revealed a new Soldier - one with greater differences in terms of age, military experience, adjustment needs, support for medical, family, financial and emotional needs, and overall expectations. This new Soldier required a whole new set of functional requirements. Additionally, the spectrum of feelings and experiences for nursing staff simply were not anticipated originally.

What did we learn through this process? First, we recognized that strategic planning can and must be done with new missions even when we can't anticipate all the needs, complications, and issues that may arise. This long-term planning had to be assessed and adjusted frequently since we discovered new requirements as we met Soldiers and heard their needs.

We learned that you can't underestimate time – time for listening, paperwork, problem-solving, implementing changes, training, stress management, and debriefing. In other words, everything becomes complicated very quickly when dealing with military systems, health care, wartime, and Soldiers' lives.

We also learned that not just anyone can do this case management job. Just as some nurses avoid the intensity of critical care and some dislike the unknown of the emergency room, we need to recruit nurses for this who have unique personality traits. Some of the traits that help a Case Manager be successful in this role include: (a) an ability to be very professional yet human, (b) an understanding or quick ability to grasp the big picture of the AMEDD and multiple health care systems, and (c) a desire to be involved. This may sound easy but the job requires a unique closeness with these patients while being able to maintain a distance and objectivity.

One day we were really busy and the floor was filled with Soldiers. Most of them had just returned and were in the same company. I escorted a Soldier out of my office who I had been case managing for several months. As we walked out of the office, there was an audible gasp and an overwhelming reaction as they all turned in awe to this Soldier. Immediately they raced to him with shouts of recognition and tears of joy and I heard them say "We never heard anything after the explosion – we thought you had died. Everything is OK now that we are at full strength again." As a civilian I don't think I had ever fully appreciated the depth of commitment and devotion Soldiers feel in their units.

What Keeps Them Going

For all the cost of caring, there are tremendous benefits. At times, it was difficult to get nurses to speak of all the pain and struggle with the job and to share the significant stories captured in this article. But the joy, the happiness, the warmth the Case Managers describe from their interactions with each Soldier was always foremost in their stories and in their offices. Their desks represent the stories they hold in their hearts. They share the meaning of multiple symbols of struggle and success -- pictures, coffee cups, coins, remnants, unit patches, hats, and other little trinkets with personal significance. All of these are simply gifts representing life and the way Soldiers say "thank you" in their individual way.

The Soldier Readiness Case Managers shared this list of feelings that keep them going and make it all worthwhile. They stated that they feel useful, lucky, empowered, helpful, and proud that their work makes a difference and has real meaning. They feel a sense of selflessness that feels like a way of serving back home and being patriotic. This is a new kind of nursing that we describe as the battles on the Front-Back Line. Most of the Case Managers describe this job as an "awesome experience" and the same words keep coming back again. *"This is the most stressful job I've ever had but even more – it is the most rewarding job I'll ever have and has already given me a lifetime of memories."*

Sometimes it is so hard to see their pain; the physical injuries that they know will change their lives forever. But that's nothing compared to their eyes – often they won't look at you, or they stare through you. So many emotions are in their eyes, their posture, their walk. They just need reassurance that someone cares, values what they did and who they are, and will listen to them and understand their questions and fears. So often I feel like I'm their mom as much as their nurse Case Manager and I want to just take them in my arms and hold them. My job is to give them hope that it will be OK, and "it" is a lot of things. And sometimes, I take a breath and don't know what I'm gong to say, and then this incredible Soldier will say something like "It doesn't really matter how long it takes, I have nothing but time, and time here is better than time there, and I'm one step closer to home." It's then that I really feel selfish because they are the ones who constantly give me hope and inspiration. I'm so proud to be a part of this program.

One day I observed a Soldier walk up to the desk and heard our new front desk clerk ask "How can I help you" before he had even looked up from his computer screen. When he did look up he was seeing the face of a young boy, a Soldier. I heard him say "Gosh you look younger than I am and the whole staff says I'm just a baby. Did you just come back from war? You must be incredibly brave to volunteer to go to war before you are even 21. I sure couldn't do that, I would just be too afraid. You know, you are going to be my new hero. Is that OK? Yep, you are my new hero, I won't forget you." The 1SG of that Soldier was there and overheard this conversation. He called me a few weeks later. He told me he had been with this Soldier before, during, and after their deployment and nobody could break his self-protective shell. He always did everything asked of him without complaint, but he always just kept to himself. He didn't laugh, socialize, share, or talk of his life. Since this short encounter with the young medical clerk, he had been different – more animated, relaxed for the first time, and had even smiled and joined in discussions with the other Soldiers. The 1SG knew that he had joined the Army because he has nothing else in his life. Nobody would care if he lived or died so it seemed like a place to go. And certainly nobody would think of him as a hero . . . and then he had a short conversation with a medical clerk. The 1SG wanted to make sure we know that what we do makes a difference.

Reference

Compassion Fatigue. A distance learning educational program CD produced by and available through the Multimedia Development Branch, Department of Training Support, Army Medical Department Center and School, Fort Sam Houston, TX 78234. 2005.

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Keys to Success in Training 91Ws

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Introduction

In 1862, at the Battle of Manassas during the Civil War, the number of casualties was so great that it took an entire week to remove the wounded from the battlefield. For Surgeon Jonathon Letterman, Medical Director of the Army of the Potomac, this delay in assisting wounded Soldiers was unacceptable. This was the impetus that led him to overhaul the method in which injured Soldiers were treated. Doctor Letterman trained Soldiers to provide care to the wounded and transport them via horse and wagon to the nearest aid station to receive medical assistance. Thus, he is credited with training the first combat medics and developing the first ambulance corps.[1]

The combat medics' capabilities and roles have evolved with every major conflict since the Civil War. Skills and capabilities grew with medical advances such as the deployment of plasma in World War II and the advent of Huey helicopter evacuations in Vietnam. With Operation Desert Storm, the role and scope of the 91B/C was fully tested with the reality of biological and chemical warfare. Technological developments such as telemedicine and automated electrical defibrillators have contributed to the lifesaving advances within trauma medicine making a consideration for change in the role and capabilities of the 91B/C inevitable.

The terrorist attacks against the World Trade Center and the Pentagon have redefined the possible threats that our nation faces as well as the mission of the armed forces. Even before these threats were apparent, the Department of the Army, U.S. Total Army Personnel Command, issued a notification of future change (NOFC) memorandum E-0004-5 on 30 Sep 99. The Army Medical Department (AMEDD) has redefined the mission of the 91B (combat medic) and 91C (licensed practical/ vocational nurse) to the new and enhanced *91W, Health Care Specialist.* Effective 1 Oct 01, the Army personnel system automatically changed all Soldiers in the 91B/C military occupational specialist (MOS) to the new 91W MOS. A "Y2" Additional Skill Identifier (ASI) following the 91W MOS (91WY2) denotes that the Soldier has not completed the transition process. In 2009, all 91WY2s will be nonmilitary occupational skill qualified (MOSQ) and will be either reclassified into a nonmedical MOS or discharged. "According to the former Army Surgeon General, Lt Gen James Peake, the new 91W MOS will improve the versatility of today's medic and produce a significantly better trained trauma medic in support of the Army's future operations, to include combat operations, peacekeeping missions, humanitarian efforts, reaction to terrorism, and homeland defense."[2]

The task of transition and sustainment of the 91W Health Care Specialist affects all three Army Components: Active Duty (AD), United States Army Reserve (USAR), and Army National Guard (ARNG) personnel. According to the Multiple Occupational Data System (MODS), as of 8 Jun 05, the transition rates for 91Ws are as follows: (1) Active Component (AC) has 19,123 assigned and 14,277 or 75% transitioned; (2) USAR has 6,229 assigned and 2,549 or 41% transitioned; (3) ARNG has 9,077 assigned and 4,158 or 43% transitioned; (4) South Carolina Army National Guard (SCARNG) has 188 assigned and 52 or 28% transitioned.; and (5) All components (AC, USAR, and ARNG) have 35,129 assigned and 21,084 or 60% transitioned.[3]

The MODS data validates that the Reserve Components (RC) are having greater challenges than the AC in transitioning soldiers to the 91W MOS. The transition for AD is expected to be complete by 30 Sep 07, while the USAR and ARNG have an extra 2 years until 30 Sep 09. Up until the deadline, Soldiers are considered MOSQ and deployable. The purpose of this article is to briefly discuss the 91W transition/sustainment process and to share what the SCARNG has done to initiate sustainment training. The authors will also share lessons learned. Sharing the SCARNG sustainment plan can assist other states with a design and implementation of their own 91W sustainment training plans.

Transition Process

The manner by which a Soldier completes the transition process depends on several variables. The Arizona ARNG has compiled a guideline of transitioning in a succinct manner in AZANG Pamphlet 600-91.[4] The listing is changed slightly to make it more applicable to all units and provides an excellent overview of the different process options for transitioning 91B/ Cs to the 91W MOS (Table 1).

According to the Army Medical Department Center and School (AMEDDC&S) 91W website (**www.cs.amedd.army.mil/91w**), the transition process for the AC has been resourced within and is available to all who seek it. There are multiple transition training sites listed on the 91W

a. All 91Bs and 91Cs who possess any of the following criteria on 1 OCT 01 will automatically be grand-fathered into the 91W MOS: 1) E7 (P) on or before 01 Oct 01; 2) E8 MSG/1SG; 3) E9 SGM/CSM continue to transition to 91W.

b. Individuals that do not meet the grand-fathering criteria are considered to be in transition and must complete one of the seven processes listed below in order to drop the Y2 ASI and qualify for the 91W MOS. Transition period for the RC begins 1 Oct 01 and ends 30 Sept 09.

(1) Process 1 - Paramedic (NREMT-P) National Registry EMT. All 91B/91Cs who currently maintain the NRET-P *qualify* for the 91W MOS and require *no further training*. All 91Bs that fall into this category must complete a DA Form 4187 and submit it to the individual within their state who has read and write access to MODS. All 91Cs must complete a DA Form 4187 and submit it to the individual within the state who has read and write access to MODS.

(2) Process 2 - Intermediate (NREMT-I) National Registry EMT. All 91B/91Cs who currently maintain the NRET-I Certification qualify for the 91W MOS and require *no further training*. All 91Bs that fall into this category must complete a DA Form 4187 and submit it to the individual within the state who has read and write access to MODS. All 91Cs must complete a DA Form 4187 and submit it to the individual within the state who has read and write access to MODS.

(3) Process 3 – All 91B/Cs who hold a current Licensed Practical/Vocational Nurse Certification *plus* completed the National Registry Emergency Medical Technician Basic (NREMT-B) *plus* are certified in Basic Trauma Life Support (BTLS) ***or*** Pre-Hospital Trauma Life Support (PHTLS) *qualify* for the 91W MOS and *require no further training*. All 91B/Cs that fall into this category must complete a DA Form 4187 and submit it to the individual within the state who has read and write access to MODS.

(4) Process 4 – All 91Bs who have completed the AC BNCOC *plus* NREMT-B *plus* BTLS ***or*** PHTLS *qualify* for the 91W MOS and *require no further training*. All 91Bs that fall into this category must complete a DA Form 4187 and submit it to the individual within the state who has read and write access to MODS.

(5) Process 5 - 91Bs who have completed the RC BNCOC *(after 1 Oct 1996), plus* NREMT-B *plus* BTLS ***or*** PHTLS *qualify* for the 91W MOS and *require no further training*. All 91Bs that fall into this category must complete a DA Form 4187 and submit it to the individual within the state who has read and write access to MODS.

(6) Process 6 - 91Bs who have completed the RC BNCOC (prior to 1 Oct 96), *plus* NREMT-B *plus* BTLS ***or*** PHTLS and must also have completed Trauma AIMS to qualify for the 91W MOS. All 91Bs that fall into this category must complete a DA Form 4187 and submit it to the individual within the state who has read and write access to MODS.

(7) Process 7 - 91Bs that *have not completed* BNCOC but have completed NREMT- B *plus* BTLS ***or*** PHTLS *plus* Trauma AIMS *qualify* for the 91W MOS and *require no further training*. All 91Bs that fall into this category must complete a DA Form 4187 and submit it to the individual within the state who has read and write access to MODS.

Table 1. Transition Process (Form STARC AZ Pamphlet 600-91)

web page for the AC and RC. The AC locations will also accommodate USAR and ARNG Soldiers if there is space available. The sustainment process for the AC and RC may be supported by the training sites but is also expected at the unit level. Upon completion of transition, DA Form 4187 must be submitted to the personnel officer and the Y2 ASI will be removed to denote that the 91W has completed transition.[5]

Sustainment Training

Once the transition of Soldiers has been completed, the challenge of keeping Soldiers sustained begins. The NREMT is the civilian requirement that the AMEDD requires for the 91W. Once the EMT-B passes the National Registry Exam, he or she is NREMT certified. All 91Ws must renew their certification every 2 years by submitting their re-certification form and required paper work postmarked no later than 31 Mar. The NREMT mails all re-certification forms each November prior to the expiration date. Once validation of continuing education and submission of the re-certification form and fee is received, re-certification is granted. For further information regarding the registration fee, see NREMT website at **http:// www.nremt.org.**[6]

The 91W MOS dictates the (NREMT) certification. Failure to maintain this certification will result in reclassification. The NREMT re-certification requirements include: completion of 48 hours of continuing education; 24 hours of EMT refresher; American Heart Association Health Care Provider level CPR certification; and verification of skill maintenance. For further information regarding equivalent methods of validation, see the NREMT website.

In addition to the civilian requirements, the Army Surgeon General has directed that all 91Ws validate skills proficiency on a semi-annual basis. Training Curricular (TC) 8-800 provides directions for implementing the Semi-Annual Combat Medic Skills Validation Test (SACMS-VT). The introduction to TC 8-800 states:

> *The 91W is a combat medic that must be ready to save lives on the battlefield and is, therefore, required to validate key medical skills every 6 months. The SACMS-VT below includes seven combat medical skills' training tables and Table VIII. supports this requirement and is the hands-on test of these critical skills. These skills must be sustained because they are perishable. Many 91W duty positions do not allow opportunities for Soldiers to exercise these skills on a routine basis.* [7]

The major areas of sustainment training outlined in TC 8-800 include: (1) Trauma Assessment and Management; (2) Immobilization of Bone and Joint Injuries/Extraction; (3) Medical Assessment and Management; (4) Basic and Advanced Airway Skills; (5) CPR Management; (6) NBC Medical Skills; (7) Evacuation; & (8) Hands-On Skills Testing.

SCARNG Sustainment Program

When the AMEDD initiated the directive for the 91W program, the SCARNG questioned where the funding would originate to actually provide the necessary staff and training. In Nov 02, a decision was made to provide training at a centralized location held at the 218th Regiment (Ldr), McCrady Training Center, 4th Battalion (Bn) General Studies, Eastover, South Carolina (SC). Since no extra funding was designated for this mission, SCARNG Medical Command provided two officers to initiate the program. These two officers are traditional guardsmen who perform their duties on weekend drills and include a nurse practitioner *assigned* to the training center as the 91W Director and a physician assistant who is *attached* to the training center and functions as the 91W Coordinator. Since each of the mid-level providers remained a part of the SCARNG Medical Command, Operation Iraqi Freedom dictated that their skills be used in providing physical exams for multiple deployments within the state. The priority to mobilize Soldiers delayed the implementation of the program. Additional staff was added by the commander of the 218th Regiment (Ldr), McCrady Training Center, assigning an Active Guard and Reserve (AGR) E-7.

Once personnel were assigned, the first year was spent in the planning stage. It should be noted that initial efforts were focused on getting the McCrady Training Center credentialed by the AMEDDC&S as a certified site for transition and sustainment training. The idea to become an official transition training site was abandoned since staffing was prohibitive. The decision was made to send 91Ws to existing active duty and reserve training sites for transitioning. The SCARNG decided to focus their resources on sustainment only.

Advanced planning is required by National Guard and Reserve Units that decide to use a centralized location such as a General Studies Battalion to serve as the administrator of the 91W program. This is critical in order to obtain billets, meals, classroom reservations, and required equipment. The SCARNG General Studies Battalion required the following documents: (1) Executive Summary; (2) Operations Plan; and (3) Memorandum of Understanding between the 218th Regiment (Leadership) Command and the Deputy Chief of Staff of Operations and the State Surgeon of SC. The authors are willing to share these documents to assist 91W training in other locations.

Simultaneously with the above planning requirements, the staff began instructor training to become qualified to teach both basic cardiac life support (BCLS) and basic trauma life support (BTLS) (equivalent to Pre-Hospital Trauma Life Support or PHTLS). Equipment required for BCLS and BTLS/PHTLS was requested and ordered along with appropriate teaching manuals. The 91W web site has already established a listing of equipment needed for required courses. This listing is invaluable. The TC 8-800 or Semi-Annual Combat Medic Skills-Validation Test (SACMS-TS) booklets were printed and are hand receipted to individual Soldiers to keep printing costs to a minimum.

The training staff applied for read and write access to MODS in order to track and input the status of 91W training in the state. The MODS is an excellent tool for unit commanders and training personnel to monitor the standing of 91W training. The web address is **ww.mods.army.mil**. Commanders or their designated representatives may log on this site and request access. Individual training files were established for each 91W to validate certifications and sustainment training in the event of an audit. Hard copies of required training provided from each 91W must be maintained as proof of attendance and completion of required courses. The TC 8-800 recommends the use of DA Form 7442-R, Tracking Sheet (Table VIII) to be used to record pass/fail status of each table, as a unit level record of the Soldier's Table VIII test completion and as the basis of data input into MODS. It is essential that both transition and sustainment information is recorded into MODS. This helps the 91W when they have to assemble the documentation for NREMT re-certification.

The next major initiative was to communicate with the major and subordinate commands to stress the importance of the 91W mandate and how to accomplish the training. Formal

communication began when the 91W Director arranged a briefing for the general officers to explain the role change and request support from each of the major commands. The Commander of the 218th Regiment (Ldr), McCrady Training Center provided briefings throughout his command while the 91W E-7 staff member briefed the noncommissioned officer (NCO) trainers throughout the state. To help disseminate information, the staff gave a briefing at the annual SC AMEDD Conference to emphasize the requirements and classes available to 91Ws through the McCrady Training Center. After approximately a year of planning, coordinating, and communicating, the first course was available in Oct 04.

With current staffing, the capabilities of the SCARNG to provide 91W sustainment training are somewhat limited. Despite this, three staff members can provide BCLS training for a total of 18 Soldiers per weekend drill. The TC 8-800 requires a staff to student ratio of 1:1. All seven skills required as part of the semi-annual combat medic skills validation test can be accomplished in approximately 2 hours. This allows one staff member to provide sustainment training for four 91Ws per day. Currently, this schedule is meeting our needs to help Soldiers maintain basic trauma and life sustaining skills.

The schedule for SCARNG sustainment training at the McCrady Training Center is as follows:

October	BN Specific Training
November	Basic Cardiac Life Support
December	91W Staff Planning
January	Basic Cardiac Life Support
February	TC 8-800 Training
March	TC 8-800 Training
April	91W Staff Planning
May	Basic Cardiac Life Support
June	TC 8-800 Training
July	TC 8-800 Training
August	Basic Cardiac Life Support
September	Basic Cardiac Life Support

91W Training - 4th BN 218th Regiment - Fiscal Year

As of 8 Jun 05, the SCARNG has 188 Soldiers classified as 91Ws with 52 being fully qualified.[3] Seven additional Soldiers did not complete sustainment training as required. Four of these Soldiers were deployed and actually received sustainment training at the mobilization station prior to deployment and three did not re-enlist or were reclassified to another MOS.

Implementing these courses has been rewarding, especially when 91Ws are able to demonstrate their improved skills after completion of the training. It is important to remember that 91W Soldiers have one of the most important missions within the Army: to provide lifesaving skills to the fighting force. "Through focused training, maximized available resources, and accurately measured sustainment, the Army achieves the goal of AMEDD success: *Capable Medics Who Conserve the Fighting Strength*." (TC 8-800).[8]

Lessons Learned

There is no doubt that the military system needs a highly trained medic. The benefit to Soldiers is readily measurable in survival of combat casualties. At the unit level, finding the time to allow medics to maintain and sustain the skills they have developed is increasingly difficult. Commanders face multiple demands for the limited training time available. The 91W MOS is one of the few enlisted/NCO occupational specialties within the military that requires civilian certification. Without a strong focus on the needs of the 91Ws in individual units, it is easy to allow valuable training time to be spent on many other tasks that are equally critical for war fighting missions, but do not help the medic meet the NREMT re-certification requirements. It is not reasonable to expect the Soldier to be responsible for doing this on non-duty time. Every trained 91W is a valuable asset to the system and commanders have an obligation to provide the best training possible.

In the SCARNG, the majority of the 91Ws do not work in the medical field as a part of their civilian occupations. Without a concerted effort by the leadership at all levels, the training of combat medics can take a secondary focus. Unfortunately, the result has been a last minute rush to help the medic get the necessary requirements to meet National Registry re-certification requirements prior to their bi-annual deadline of 31 March. This mentality leaves sustainment training of medics as "a last resort" rather than a top priority. What are some of the potential solutions to this problem?

First, commanders need to take a more active role in helping units develop monthly training specifically geared to 91Ws. Second, unit commanders should understand that the TC 8-800 task testing is required at least twice a year, with a minimum of 4 months separating record events. Line unit commanders have to be educated that training of the 91W is not an optional activity to be done when all the other training has been completed.

"Depending on availability and applicability, commanders will use the Combined Arms Training Strategy (CATS) to determine required training events outlined in AR 220-1. As indicated in AR 350-41, CATS current strategies describe training events, frequency of events, and the resources required to train to standard. All CATS that contain 91Ws prescribe that the SACMS-VT will be administered twice a year" (TC 8-800).[9] Ultimately, if 91Ws do not meet the requirements for sustaining MOSQ, then units will be deemed nondeployable for combat readiness by 30 Sep 07 for AC and 30 Sep 09 for RC. The SC State Surgeon and Chief of Staff requires that all unit commanders brief the status of their assigned 91Ws during the Yearly Training Cycle Brief.

Ways to train smarter also need to be identified and communicated. If one combat unit is performing 91W training with simulation and moulage and can handle additional medics, resources need to be shared so that training can be optimized. The CATS, "located in the General Dennis J. Reimer Training and Doctrine Digital Library at **www.adtdl.army.mil/atdls.htm,** details the examples of training events, time, and resources required to sustain 91W proficiency. (After entering the website's digital library, go to "Commandant-approved Individual and Collective Training Support Materials." Then go to "Combined Arms Training Strategy" from the library search form)." (TC 8-800).[10] Reserve and National Guard units need to take advantage of training being conducted at active duty sites whenever possible.

One of the biggest obstacles that the SCARNG faces in maintaining 91W re-certification is getting information about training directly to the 91W Soldier. This has resulted in poor attendance at McCrady Training Center. All the planning and coordinating is wasted if Soldiers don't attend the training. Quarterly e-mail newsletters specifically geared to 91Ws might be a viable option. In addition, use of the SCARNG website has been initiated, but thus far, has been ineffective in communicating with 91Ws in the state of SC. It is believed that this is due to Soldiers being unaware of the resources available to them on this website. Plans are underway to better market the use of this website as a tool for Soldiers to manage their own career.

Last, a sense of professionalism needs to be cultivated among combat medics to take advantage of self-directed computer courses and civilian training opportunities. In addition to the 91W website mentioned previously, the Continuing Education Coordinating Board for Emergency Medical Services at **http://www.cecbems.org/** is a great resource. Learning Resource Centers are not always available to outlying reserve units as they are for AC. In an effort to facilitate Soldiers taking advantage of computer training, computers and Internet access must be made available specifically for this purpose at individual units. The SCARNG is investigating the use of CD based courses that don't required high-speed Internet access.

Conclusion

The SC Army National Guard has made moderate strides in providing 91Ws quality sustainment training, although much remains to be done. As more of our medics are transitioned and fully qualified, the sustainment training mission is increasing. Everyone involved in training 91Ws will need to train smarter to achieve this goal. In an e-mail dated 4 May 05, CSM David Litteral, Chief Instructor, Department of Combat Medic Training, AMEDDC&S, aptly stated, "The 91W is not a fire and forget weapon system. Several venues exist to sustain medics." The key to the success of this endeavor is taking advantage of all the existing training opportunities that are already in place. Distance Learning methods can be used to satisfy 22 of the 72 hours of continuing education credits required for NREMT re-certification. Although the remainder of the required hours must be on-site training or lectures, video teletraining does meet the requirements set forth by NREMT and is another viable option. It is important to develop better methods of communicating with 91Ws to emphasize and promote self-directed learning and career management. Finally, there are changes underway in the transition process based on the lessons learned in Iraq. Specifically, changes in training directed toward battlefield emergency care with an emphasis within the first hour of trauma and management of life threatening injuries, including traumatic amputation. These changes were announced at the 3d Annual 91W Conference held in San Antonio on 8-12 May 05. More information regarding these changes will be published on the 91W website according to the AMEDDC&S. Training of 91Ws is evolving and improving and the goal is to meet the challenge. Is your unit ready?

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Community Health Nursing in the Army: Past, Present, and Future

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Introduction

The threat of weapons of mass destruction, long-term deployments, nation building, and supplanting Community Health Nurses (CHNs) into Army Combat Support Hospitals and Civil Affairs (CA) units are forcing CHNs to closely examine their current and future roles. Like their civilian counterparts in public health, CHNs in the Army must adapt and expand their roles and functions. CHNs in the Army are currently re-aligning their practice in concert with the essential public health services outlined by the Public Health Functions Steering Committee.[1] Core public health functions include assessment, policy development, and the assurance of necessary health services along with a credible response to critical situations and emergencies.[2]

The CHNs in the Army possess a unique focus and skill-set that is perfectly suited to meet current and future military public health demands. This article will discuss the history and skills of the CHN, developing roles for CHNs, and the vision for future CHN practice.

History of CHN in the Army

The first community health nursing service in the Army was started at Fort Devens, MA, in February 1949. In order to reduce the large number of infants being brought to the Emergency Department for nonemergent problems, Army nurses provided family-centered services similar to those available to civilian communities through public health and visiting nurse programs. The official title for this new specialty was "Army Health Nursing."

In 1951, the first health nurse was assigned to the Preventive Medicine Division, Professional Service Directorate, Office of The Surgeon General, to assist on matters related to the practice of Army health nursing. In 1955, the position of Chief, Health Nursing Branch, Preventive Medicine Division, Office of The Surgeon General, was established to direct and coordinate Army health nursing services. By 1962, the number of Army health nurses had increased to 90, serving in 35 CONUS installations and 23 overseas areas. By 1979, the number of authorized positions reached 120. Today, there are approximately 130 Army CHNs and more than 70 Department of the Army civilian CHNs worldwide.

The Developmental Training Program in Army Health Nursing was established at Forts Bragg, Knox, Benning, Dix, Leonard Wood, Lewis, Ord, and Brooke Army Medical Center in July 1961 and was discontinued in 1969. Later in 1969, a 5-week Army Health Nursing Orientation Course, was started at the U.S. Army Medical Field Service School at Fort Sam Houston, TX. Designated 6F-F1, this course was designed to provide baccalaureate-prepared Army Nurse Corps officers with a fundamental working knowledge of Army health nursing and preventive medicine practices. In March 1973, this basic course was combined with the basic course for preventive medicine officers and sanitary engineers, forming a multidisciplinary Community Health and Environmental Science course (6A-F5). In September 1974, the official title was changed from "Army Health Nurse" to "Army Community Health Nurse" and a specialty skill identifier (66B) was established in 1976.

Unique Skills of the CHN in the Army

According to Stanhope and Lancaster, community health and public health nursing are distinctively different.[3] Community health nursing is a synthesis of nursing theory and public health theory applied to promoting, preserving, and maintaining the health of populations through the delivery of personal health care services to individuals, families, and groups. In contrast, the focus of public health nursing is the community, or population, as a whole and the effect of the community's status (including health care resources and the environment) on the health of individuals, families, and groups.

Army community health nursing is actually a synthesis of community health nursing and public health nursing that occurs in a military environment for the accomplishment of military missions. The CHN practice in the Army includes interventions from a community perspective, such as tuberculosis, sexually transmitted infections, and other communicable disease surveillance and control measures. The CHNs also intervene from a public health perspective, such as informing or enforcing public health policy.

The CHNs possess specialized skills related to: (1) community assessment, structure, organization, and development; (2) epidemiology and disease surveillance and control; (3) demographics; (4) biometrics; (5) environmental health; (6) health promotion; (7) public health program development, implementation, and evaluation; (8) care coordination/case management for conditions of public heath interest, such as lead toxicity and tuberculosis; and (9) informing and developing public health policy.

There are also a number of doctorally prepared Army and Department of the Army civilian CHNs. These nurse scientists are actively engaged in building the science of CHN practice in the Army, identifying research priorities, and conducting research to isolate the determinants of military public health and evaluate targeted CHN interventions.

Developing Roles of the CHN

Recently, CHNs have begun deploying as CHNs, rather than Medical/Surgical nurses. CHNs in these new positions function as public health specialists, primarily responsible for implementing public health measures and providing health promotion and disease prevention services in the area of operation. Force protection activities conducted by CHNs in the area of operation have included immunization surveillance and reporting, along with managing targeted communicable/ environmental human health threats such as food and water borne enteric illnesses, sexually transmitted diseases, tuberculosis, malaria, rabies, and leishamaniasis. The CHNs have also coordinated and taught classes on pregnancy prevention, self-care, and have provided tobacco cessation and prevention services.

In garrison, CHNs monitor trends in disease and nonbattle injury and conduct nursing interventions for individuals, groups and communities to eliminate, control, or reduce health threats. As a key player in bioterrorism event case management and contact investigation, the CHN is able to advise military leaders on public health planning, and quarantine/isolation facility requirements, especially for populations with special needs. These skills transfer well to an operational environment. For instance, in a deployed setting, CHNs have already provided valuable service as clinical case managers for individuals exposed to infectious agents.

A new senior level public health officer position for CHNs is being developed to provide strategic-level health support for Civil-Military Operations in war and for military operations other than war. The CHN provides an experienced public health and clinical perspective for collaboration and public health management in CA Operations. Major duties include assessment, planning, transition support, and evaluation.

Assessment includes the CHN assimilating, organizing and interpreting data from a variety of sources to identify health problems and health promotion/disease prevention opportunities. The primary focus is on the broad range of human biological, psychological, social and spiritual needs required to keep communities of interest and U.S. forces healthy in their current and future environment. Functions include rapid community health assessments, to include an evaluation of the public health infrastructure and available resources. The CHN identifies available health resources to manage acute, recovery and transition phases of operations and for support of U.S. and coalition forces as needed.

Planning capabilities include the CHN providing recommendations for CA public health interventions and health information for intelligence reports. The CHN also investigates and interprets multiple determinants of health and disease on an ongoing basis. The CHN will also advise, coordinate, and provide tailored and targeted interventions for communicable disease outbreak activities, to include standardized treatment plans, and case and contact management for conditions of public health importance.

The CHN also has specific roles in transition support following initial and sustained military operations, including assessing the community's capacity for meeting military and civilian health needs. The CHN will also play a major role in identifying further post-deployment health-related requirements for deployed military personnel.

CHN Vision for Future Practice

The CHNs in the Army are currently re-defining and expanding their practice and scope in accordance with American Nursing Association standards and the core functions and essential services outlined by the Association of State and Territorial Directors of Nursing (ASTDN) Public Health Nursing Practice Model (Figure).[4]

The ASDTN model supports the three core public health functions: (1) assessment; (2) policy development; and (3) assurance. In a report prepared by the Institute of Medicine, assessment is described as the regular collection, analysis, and sharing of information about health conditions, risks, and resources in a community.[1] Policy development then uses the information from the assessment to develop policies and plans. Assurance relates to the availability of necessary health services and the management of daily operations and the response to critical situations and emergencies.

The ASTDN provides a list of essential public health services and specifies public health nursing activities for each service. The ASTDN essential public health services include:

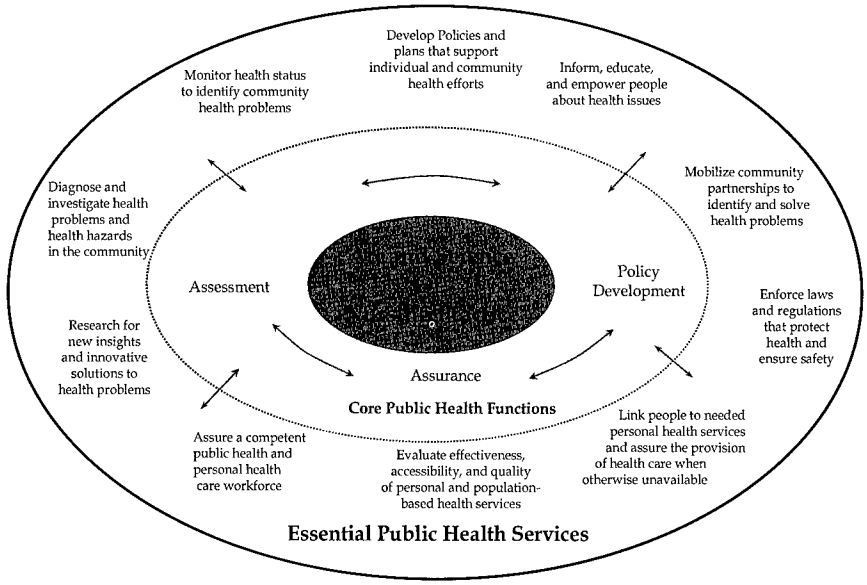

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Fig. ASTDN Public Health Nursing Practice Model.

(1) monitoring health status to identify community problems; (2) diagnosing and investigating health problems and health hazards in the community; (3) informing, educating, and empowering people about health issues; (4) mobilizing partnerships to identify and solve health problems; (5) developing policies and plans that support individual and community health efforts; (6) enforcing laws and regulations that protect health and ensure safety; (7) linking people to needed personal health services and assure the provision of health care when otherwise unavailable; (8) assuring a competent workforce; (9) evaluate the effectiveness, accessibility, and quality of personal and population-based health care services; and (10) research for new insights and innovative solutions to health problems.

For more than 25 years, nurses have struggled unsuccessfully to consistently communicate nursing practice.[5] Since most data sets and medical classification systems do not include nursing care, the impact of nursing on patient care quality and health care costs remains unknown and invisible.[6] The CHNs in the Army recognize the importance of articulating, documenting, and evaluating their practice.

Accordingly, a team of CHNs is currently working with civilian leaders in public health nursing and nursing informatics. Using three classification systems: (1) the North American Nursing Diagnosis Association for diagnoses; (2) The Nursing Interventions Classifications for interventions; and (3) The Nursing Outcomes Classification for outcomes, this team is developing a unifying language to describe CHN practice. This standardized language will provide a foundation for developing the science and body of knowledge, educational structure, policy, clinical practice, electronic information systems, and a method for evaluating the impact of CHN practice in the Army.

Conclusion

Military and civilian CHNs in the Army have a rich and proud tradition of service. Since the first CHN program in 1949, CHNs have been an integral part of the military public health infrastructure. The CHNs continue their commitment to our nation's defense and military readiness by preventing and controlling communicable diseases, working with other professionals to assure safe and healthy environments, promoting healthy lifestyles, and informing military public health policy and infrastructure development. The opportunities for CHNs in the future are boundless. The CHNs are well-positioned to meet the rapidly changing public health demands of the Army transformation.

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CHN Principles: A Practical Application in a Tactical Setting

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An Army Community Health Nurse (CHN) has a specialized nursing role functioning as part of an Army Preventive Medicine (PVNTMED) team. Once deployed, the need for the expertise of CHN is great. During Operation Iraqi Freedom, the 21st Combat Support Hospital (CSH) from Fort Hood, TX deployed with a multidisciplinary health care team. As the only PVNTMED asset in the hospital, the CHN role was expanded. The 21st CSH A Company deployed initially with a total of three Army CHNs, only one was originally employed in that position. Some deployable hospital units did not employ a CHN at all. Yet it is evident, given the many programs the 21st CSH CHN implemented and participated in, that this member of the PVNTMED team is an essential asset during combat operations. The CHN employed in that position as well as CHNs fulfilling other positions recognized the need for the specialty, met the challenge, and persevered. The result was a great contribution to quality health care, positive patient outcomes and improvements in quality of life for all of our beneficiaries and hospital staff. The initial medical threats to the deployed personnel were from the harsh living condition of military operations. As the war operation progressed, the Community Health focus became sustaining the community's health. Finally, the main CHN effort entailed promoting preventive health measures.

Introduction

The multifaceted capabilities of an Army CHN are crucial in the tactical setting. The nurses in this specialty have a functional skill set that supports the fluctuating medical needs on the modern battlefield. The Field Manual that guides Army PVNTMED Service, FM 4-0217, highlights the importance of PVNTMED by asserting: "The employment of PVNTMED personnel in defeating the threat is one of the least expensive means of maintaining a fighting force. When PVNTMED is employed early in the mission, fewer personnel are lost to disease and nonbattle injury (DNBI)." A CHN deployed with a CSH significantly contributes to the decrease in DNBI.

By design, a CHN is responsible for the implementation and maintenance of epidemiological surveillance systems that support force health protection. Trained in data collection, analysis, intervention and health education, there are numerous field responsibilities that are well suited to the expertise of the CHN. During combat operations, CHNs mobilize and integrate all available resources to identify medical threats to the deployed force and minimize DNBI. This article depicts the enormous contribution that this Army Nurse Corp specialty contributed as part of the 21st CSH, forward deployed to Southwest Asia during Operation Iraqi Freedom.

Background

On 19 Mar 03, the Soldiers of the 21st CSH boarded the plane bound for Southwest Asia and landed at Camp Wolf, Kuwait. Hostilities began the next day, and the CSH began the process of readying ourselves for our wartime mission. On 23 Apr 03, upon receipt of orders, the A Company 21st CSH left the staging area in Kuwait and convoyed to Camp Anaconda, Iraq. All personnel quickly set about constructing the hospital, which was fully operational and ready to receive casualties within 48 hours. This level III, 84 bed combat health support facility provided care to U.S. Soldiers, coalition forces, displaced civilians, and enemy prisoners of war located in the central Iraqi plains. This hospital, located near the town of Balad, Iraq, provided direct Level III combat health support on area basis to the 4th Infantry Division and the V Corps. On the ground and prepared to accept patients, many PVNTMED considerations quickly became evident.

Role of the Deployed CHN

Throughout history, DNBI resulting from medical threats (including, but not limited to, heat, cold, and disease) have accounted for more losses of fighting forces than combat-related injuries. This was also true during this military operation. The CHN assigned to the 21st CSH was responsible for implementation and maintenance of preventive health measures. Continual assessment was required to meet the community's preventive health needs as Camp Anaconda developed. The early undertaking was establishment of a healthy environment for the Soldiers to work and live in. As the deployment progressed and the theater matured, the focus shifted to sustaining and improving the level of health. Finally, as the area of operations stabilized, health promotion moved to the forefront of CHN activities.

The following programs and activities were necessary and utilized throughout the deployment: Field Sanitation, Infection Control (IC), Force Protection (immunizations, vaccinations, insect bite prevention, intervention and control), Infectious disease prevention, control, and management and Reportable Disease investigation, follow-up, and reporting. The practical application of a CHN program in a tactical setting validates this specialty's role in combat.

Phase 1: Establishing Community Health

Field Sanitation – Alpha (A) Company 21st CSH was set up at Camp Anaconda with Deployable Medical Systems and a tent bivouac living area. Doctrine requires each unit to have a trained Field Sanitation Team. Although the one trained Soldier put forth a tremendous effort, it was still evident that more personnel needed to be trained to meet the huge sanitation demand. Normally a 91S (Preventive Medicine Specialist) is assigned to the CSH but during this deployment the slot was vacant. Therefore, the CHN stepped in to coordinate and supervise duties normally managed by the 91S. There was a wide array of tasks to be accomplished on a daily basis to include hand washing station management, latrine up-keep, and regular and biomedical trash maintenance. Burn-out latrines were in short supply and therefore limited to only patient use. The hospital personnel originally utilized deep-pit latrines, which were burned and covered over once full. Being a temporary solution, Community Health personnel advocated and coordinated for the unit to receive chemical latrines. The local PVNTMED asset, 255th PVNTMED DET, provided monthly Field Sanitation training to Soldiers and inspections of the hospital and living area. Soldiers trained in Field Sanitation were responsible for cleaning of the pit latrines, burning of the limited burn-out latrines, and other Field Sanitation related functions.

Infection Control – Assessing the IC needs of the living area and hospital operations in a harsh field environment was a monumental task. Selected as the hospital IC Nurse, the CHN collaborated with all hospital sections to develop the 21st CSH IC Standard Operating Procedure (SOP). The plan included the management of infectious waste, blood borne pathogen exposures, reportable diseases, and all other standard IC issues. With no running water, plumbing or waste disposal services available in the work or living areas was especially challenging.

To address proper waste disposal, an immediate and short-term solution was the use of designated deep pits where waste was buried. A centralized collection point for Regulated Medical Waste was established and the use of this collection point was mandatory. The CHN enforced Field PVNTMED doctrine, which required incineration or sterilization and burning of all medical waste. With the initially limited incineration capabilities, approval was sought to temporarily burn the deep pits until a dedicated incinerator arrived. In garrison , the act of simply taking red bag waste to the hospital's basement will never be taken for granted again.

Hand washing is the core of IC. Innovative and creative hand washing apparatuses were constructed by the FST for the dining tent, and staff and patient latrines. Motorized field sinks which drained into one gallon containers were available and in use in all patient-care areas. Alcohol-based hand sanitizers were frequently used due to limited access to running water.

In all hospital settings, needle stick injuries do occur. In the 21st CSH, the risk of needle stick injuries was increased due to the nonavailability of needle-less IV tubing and saline lock systems. The IC SOP established a protocol with clear guidance for steps to take post-exposure to blood borne pathogens, including follow-up and counseling with the IC nurse/CHN. In addition, the IC committee explored the feasibility of introducing a needle-less system to the CSH.

The occurrence of local nationals arriving to the CSH with respiratory complications clinically similar to active tuberculosis, made evident the necessity for N95 HEPA filters for staff members. Due to the small number on hand, a priority list was established to supply the N95 Masks to the sections where the largest volume of patient flow occurs: (1) The Emergency Medical Treatment (EMT) section; (2) Operating Room; and (3) Intensive Care Unit. To address the shortage, fit testing equipment and respirators were ordered.

A protocol was also established for properly isolating high-risk patients. In the field, patient placement options can be greatly limited by space constraints or the physical set-up of a unit. Isolation strategies were greatly affected by these constraints. Since the wards were made entirely of tents, it was important to try to geographically separate a patient who needed isolation. One of our main strategies was cohorting patients with like symptoms and cohorting staff to help decrease the possibility of disease transmission. Throughout the deployment, IC interventions proved to require ongoing evaluation and enforcement of the proper IC procedures required continual education.

Food and Water Borne Diseases – One of the challenges faced by the CHN was an increase in diarrheal disease in staff members and Soldiers within our area of responsibility. The CHN tracked cases of enteric illness and found the causes to be varied. Contributing factors to the food and water borne illnesses included: improper or lack of hand washing, the absences of soap and ideal hand washing stations at the latrines,

and the consumption of foods and ice from unapproved sources. In areas of poor sanitation, locally procured foods present a high risk of disease for U.S. forces.[3]

Transmission of Food and waterborne diseases in the field setting are usually result from:
Food handlers during food preparation and serving.
Food preparation facilities that lack adequate refrigeration for food storage.
Inadequate or absent arthropod and rodent control. Animals that are permitted free access to food storage, preparation, and serving areas.
Improperly treated or stored water.
Contaminated or improperly treated ice.

The CHN personnel addressed each of these concerns throughout the deployment with active prevention measures, coordination with the other PVNTMED assets, interventions, enteric illness investigations, and education efforts. Command policy banned the purchase and consumption of food, water, and ice from an unapproved source and the Military Police enforced this policy. One of the most important defenses against the incidence of diarrheal disease was reinforcing the policy through teaching efforts.

The early efforts of the CHN established the foundation on which to build. As the deployment progressed, the immediate sanitation issues remained a part of the program. Prevention efforts then expanded to encompass other programs aimed at supporting health in and around Camp Anaconda.

Phase 2: Sustaining Community Health

Force Protection — In the spring, the central Iraqi plains support a larger insect population. The rapid infusion of a large number of people into a confined living space resulted in a high incidence of insect bites. Camp Anaconda's Soldier population grew faster than available adequate living areas. Long abandoned flea infested buildings or airplane hangars were utilized by many units. Also, nonfunctional sewage systems coupled with the increase in waste production created an environment highly hospitable to insects and rodents. Prevention of insect bites was particularly challenging as many nearby units were not supplied insect bed netting or repellant. The 21st CSH Specialty Clinic was inundated with Soldiers suffering from various types and severity levels of insect bites. To meet the demand for treatment and prevention, CHN initiated and managed a Bug Bite Clinic. When patients presented with insect bites, they were referred to CHN for assessment, treatment, and teaching. Oral antihistamines, such as Hydroxyzine HCL (Atarax), and anti-inflammatory creams, such as hydrocortisone cream, were prescribed by a physician and issued to the patients as needed. During the visits, this prime opportunity to teach one-on-one prevention of insect bites was fully utilized. Patients were educated on such measures as the use of insect bed netting, safe and effective skin insect repellants, and proper use of clothing and fabric insecticide, which can be effective in decreasing the incidence of insect bites. The 21st CSH was not equipped to supply the necessary items to all those in need, therefore information on the process of ordering these preventive items was thoroughly explained so that units could be self sufficient.

In the hospital as well as in the living support area, control of the overwhelming insect population called for insecticide use. After collaboration with the local PVNTMED asset, PVNTMED personnel were provided to spray selected areas inside the hospital and around the entire area. It also became important to act as a liaison, informing hospital staff of the activity and addressing any concerns for safety and effectiveness of the products used. Additionally, when specific units exhibited high volumes of insect bites, the CHN communicated with the unit and the PVNTMED DET.

Confirmed cases of leishmaniasis increased steadily as the deployment progressed. The CHN facilitated training of health care providers to recognize, confirm, and treat Leishmaniasis cases. Assisting in evacuating patients with Leishmaniasis from their unit to the CSH and on to Walter Reed Army Medical Center also became an important task for CHN.

Immunizations were a large part of pre-deployment processing and remained necessary throughout the deployment. A large majority of the units deployed while still in the process of completing the 1 year Anthrax immunization series. The CHN coordinated the ordering of the vaccine and posted days and times when the immunization would be administered. Other series immunizations, such as Hepatitis A and Hepatitis B, were also made available.

Due to the population of feral dogs and cats in the area and the historical tendency of some Soldiers to adopt pets or "unit mascots," there was an increased incidence of animal bites and possible exposure to Rabies. The CHN was consulted on all patients presenting to EMT or sick call with an animal bite. The Rabies vaccine and immuniglobin was administered when required and each case was reported to the PVNTMED and Veterinary Services and closely followed.

Reportable Diseases (Malaria, Sexually Transmitted Diseases, Tuberculosis, and Leishmaniasis) – Soldiers deployed to Southwest Asia are potentially exposed to numerous communicable diseases endemic to the area.[6] Therefore, Force Health Protection policy provides guidance on preventive measures such as Malaria prophylaxis, use of insect bed netting, Diethyl-m-toluamide (DEET) insect repellant and Permethrin clothing treatment insecticide and repellant. Overall, such interventions are effective in decreasing arthropod-borne disease incidents.[7] For the prevention of Malaria, personnel were started on a regimen of oral Doxycycline 100 mg once daily 1 week prior to movement into Iraq and continued the regime throughout the deployment. Once in theater, the unit was also supplied with insect bed netting, DEET, and Permethrin.

With the low incidence of vector-borne disease in the Soldier population due to prevention, complacency easily set in. During Bug Bite Clinics, and when probable vector-borne cases presented to the hospital, it was evident that many surrounding units did not consistently employ preventive measures. Some units deployed in our area of responsibility indicated that they had never started, some had even terminated, Malaria prophylaxis for their Soldiers. Education of unit commanders became necessary to address the issue and CHN had to create many innovative ways to encourage compliance. The malaria prevention message was shared at post Mayor Meetings, with the patients coming to "Bug Bite Clinic," and even with CHPPM fact sheets posted on latrine doors.

Through the astute assessments of the 21st CSH multidisciplinary health care team, probable cases of Malaria, Leishmaniasis, and all infectious diseases were bought to the attention of CHN. If the diagnosed was confirmed, CHN carefully tracked the patients and utilized proper channels to forward all the reportable disease cases to the U.S. Army Center for Health Promotion and Preventive Medicine.

Some Soldiers deployed while on the 9-month course of Isoniazid (INH) therapy for latent tuberculosis infection. The INH therapy requires periodic monitoring of liver enzymes and evaluation for adverse side effects from the medication. If easy access to the health care system was available, patients were able to continue treatment under the monitoring of the CHN.

Policies and standards assisted greatly in maintenance of PVNTMED activities. The desire to stay healthy also plays a huge role. In order to maintain the level of health CHN contributions helped to establish, health promotion activities and programs were necessary.

Phase 3: Promoting Community Health

Tobacco Cessation–uring the deployment, an unexpected demand for smoking cessation developed. The CHN implemented a Smoking Cessation Program modeled after the program utilized by Fort Hood CHN. The program was open to all interested on Camp Anaconda. Patient teaching and counseling to assist in behavior modification was provided, and if desired and deemed medically appropriate, the use of a Nicotine Patch and Bupropion HCL (Zyban) to aid in the process of becoming tobacco free was offered. An initial class entitled "Getting Ready to Quit" was followed by interactive group sessions. The protocol for patients taking the medications included monitoring for adverse side effects from the treatment, such as elevated blood pressure. One obstacle encountered was maintaining adequate supplies of the medications to meet demand, which was soon resolved with help of the pharmacy.

Health Education – Health education is as much a part of community health in the tactical setting as it is in all military communities. Education was paramount in all of the programs put in place and managed by CHN. Classes and individual sessions were provided to meet the need. Educational literature and signs to remind Soldiers of probable health risks and prevention were placed in popular areas, such as the latrine.

One of the more admired and effective modes of education was the Health Tip Board. The board was placed in a high traffic area, the hospital interchange, and various health tips were placed daily. Topics covered ranged from physical to emotional well-being. Some health tips were clear-cut and serious, others were humorous and light-hearted. Health tips were often inspired by events occurring in the area and then developed by CHN. Also, any hospital personnel who had a desire to contribute a health tip could submit their suggestion to CHN.

An example to encourage malaria prophylaxis compliance was submitted by a physician, CPT Radkar: "An apple a day may keep the doctor away and a doxycycline a day will keep Malaria at bay".

The dental hygienist, SGT Soto-Rivera, shared a tip to reduce the fly population in the latrines: "The flies are bad, we can't compete. Next time you visit the latrine, put down the seat".

Our Chaplain, CPT Walker, addressed spiritual health: "The bigger meaning of life starts inside of you".

The Intensive Care Unit section collaborated and reminded us to be kind to one another: "if we can pick up a weapon and for our country stand side by side, a simple hello or how are you today for each other we should not deny. A kind word or a pleasant smile may help a day go faster by, and before you know it, to our home we will soon fly"

Conclusion

The 21st CSH was later tasked with the higher responsibility of transitioning to a regional Medical Task Force, which requires providing direction and guidance to several smaller medical units. The groundwork that was laid early in the deployment proved extremely useful in ensuring the health of subordinate units and beneficiaries of those units as well. Since CHN at the 21st CSH had a comprehensive view of the area of operation and working knowledge of the medical system in theater, they were selected to oversee the PVNTMED activities for the Central Medical Task Force. The CHN role was that of evaluating PVNTMED trends in waste management, water quality, and food borne illness outbreaks as well as applying Field PVNTMED theory and expressing the PVNTMED implications both to Subordinate and Higher Headquarters units. From the initial breaking ground phase of the hospital set up to managing the PM assets for the Task Force, the CHN has proven the critical role medical force protection plays for the overall health and welfare of U.S. Soldiers, coalition forces, displaced civilians, and enemy prisoners of war during combat operations. The progression of Operation Iraqi Freedom necessitated continual assessment and reevaluation of the CHN program, and as this deployment continues, so will the CHN mission.

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Mental Health Services at FOB Abu Ghraib: "Nafsea (Psychology) Through the Wire"

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The U. S. Army 115th Field Hospital was tasked to provide detention health care operations for Operation Iraqi Freedom that included Forward Operating Base (FOB) Abu Ghraib, Iraq. Spending 1 year in association and caring for detainees created many rewards and challenges. Many lessons were learned regarding detainee medical care. Dealing with a different culture and language, the guard/detainee relationship from a medical perspective, and on-going wartime scenarios served as the background for our experiences. Little literature exists for this type of operation. Our knowledge focuses primarily on the mental health care of the detainee population as well as the troops. The encounter showcases the unusual and ground-breaking nursing opportunities available in the military. This is just another example of the nursing field being as varied as life itself.

The United States entered Iraq on 19 Mar 03 to bring freedom to the Iraqi people. With this entrance into Iraq came a great responsibility to ensure that security and safety would be secured for all people in Iraq. Almost immediately, insurgents made attempts to engage the coalition forces. This made for a tricky, yet necessary, component of the new face of war: detainment of insurgents. The insurgents were initially all detained at FOB Abu Ghraib.

HISTORY OF ABU GHRAIB

The internment facility is located west of Baghdad and southeast of Fallujah, in the lower portion of the Sunni Triangle in central Iraq. Built by the British in the 1960s, the compound at one time held over 15,000 prisoners who were held as hardened criminals and for political opposition reasons during the Saddam Hussein regime.

Once one of the most feared prisons in the Iraqi system, it was initially controlled by the coalition forces after the fall of the Hussein regime. A portion of the internment facility complex was turned over to the new Iraqi government in May 04 to hold Iraqi felons convicted by the Iraqi court system. The rest of the complex is used for U.S. detainment purposes. Currently, all detainees are processed through FOB Abu Ghraib.

The present Abu Ghraib internment facility system consists of a tent city arrangement. The detainees are placed in the camps based on behavioral/military intelligence requirements.

MEDICAL CARE AT ABU GHRAIB

After a scandal based on allegations of abuse of detainees by U.S. soldiers in spring 04, appropriate treatment and care of Iraqi detainees became the focus of the U.S. government. The 115th Field Hospital (later to become Task Force Med 115 [TF Med 115]), stationed at Fort Polk, Louisiana, was tasked to come to Abu Ghraib to provide detainee medical and mental health care. Upon the 115th Field Hospital's arrival to FOB Abu Ghraib in August 04, a hand-off from the prior medical facility Task Force Oasis (TF Oasis) was completed. The TF Oasis was here when a mass-casualty of the occurred in Apr 04. Mortars landed within the FOB on 2 separate days and wounded over 92 and killed 22 detainees. Although shorthanded, TF Oasis was able to save most of the injured. However, the incident proved that much larger medical resources were needed at the internment facility.

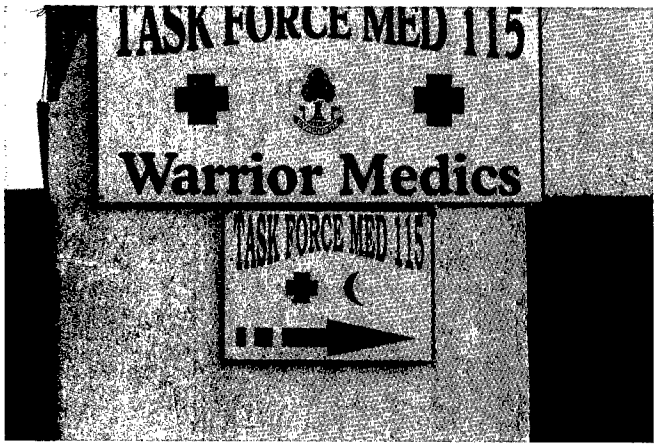
TASK FORCE MED 115

The hospital was erected underneath a concrete roof with temper tents utilized for the wards, emergency room, and ancillary care services. Taking roughly a month and a half to complete, the new hospital began providing services in Sep 04. The task force was given guidance by the Deputy Commanding General for Detainee Operations to provide care to all detainees in the area of responsibility (AOR).

The TF Med 115 soon set the standard for detainee care and was assigned the responsibility of establishing policy for detainee healthcare and writing a Field Manual. This Detainee Medical Care Operation Field Manual is set to be published upon our return.

HOSPITAL MAKE-UP

The hospital's inpatient services are composed of



two intermediate care units, an intensive care unit, and an emergency department. The new hospital was primarily built for detainee care, but also serves the U.S. troop (the term troop describes all U.S. military service members assigned to the FOB) population and civilian contingent located here at Abu Ghraib. American troops and civilian contractors are treated at the TF Med 115 Hospital when possible. If the medical needs of the patient cannot be supported by TF Med 115, the patient is medically evacuated to the combat support hospital in Baghdad.

In addition to the inpatient wards, the hospital's other departments include nutrition care, optometry, podiatry, dental, surgical services, and mental health. The hospital also has a laboratory, occupational/physical therapy, and x-ray services. In some cases, this is the first time a detainee has ever received this level of medical care. The hospital is charged with providing health care that is equivalent to an American hospital.

WIRE CARE

Beyond the walls of the hospital, health care services are provided out in the detainee camp, also known as "medicine through the wire." Most contact between health care providers and detainees occurs at this level. Services provided through the wire include medication administration, sick call, wound care, diabetes testing/treatment, and consultation to other providers in the hospital. Mental health services are also provided at this level.

Upon initial entrance to Abu Ghraib detention facility, a detainee is seen for an initial physical examination to evaluate overall health and wellness. This also serves as a good screen to identify detainees with major medical and psychological conditions. This process is called Detainee Readiness Processing (DRP), much like the Soldier Readiness Processing that takes place before a soldier leaves the U.S. for a deployment. During the DRP at the Initial Holding Area (IHA), a medical screening using a brief questionnaire is conducted, a height/weight of the individual is taken, and they go through a mental health screen. If a detainee screened positive in an area, they were further assessed for treatment options.

DETAINEE MENTAL HEALTH CARE

In addition to the initial mental health screen, other services are provided to detainees by the Mental Health Team (MHT). These services include initial psychiatric evaluations, monthly and on-going follow-up evaluations and supportive counseling as needed, critical incident debriefings (CID), emergency evaluations and treatment, and twice-daily psychotropic medication administration. When we first arrived, a base patient load needed to be established in order to determine what the psychiatric needs were for these detainees.

The TF Oasis was a small hospital that did not have the personnel or services necessary to meet the mental health needs of the detainee population. The TF Oasis psychiatric treatment plan dealt primarily with a medication regimen. Forty detainees were on psychotropic medication, and became the MHTs initial patient-load. The patient-load expanded via medical consultations, emergency consultations from Military Police (MPs), and the mental health screening process.

A mental health screen was implemented according to U.S. correctional standards. The present Abu Ghraib mental health care model was established based on recommendations from the Guantanamo Bay, Cuba, correctional facility. A mental health screen consisting of eight questions and eight assessment areas is conducted by a registered nurse or enlisted mental health specialist at the IHA. Whenever a detainee

screened positively, a formal mental health examination was performed in the camps.

The formal mental health examination evaluates the detainee in an environment that will be home to the detainee for the next several months. The need for an examination is determined either by a positive finding on the mental health screen or a consultation generated by a medical provider. The examination is done much in the tradition of the house call doctor visiting the patient at their home. The interviewer goes to the particular camp in which the detainee is located, and with the help of either a contracted Arabic translator or detainee translator, performs the interview.

Psychiatric interviews done within the camps are completed through wire fence. The results of the evaluation are then presented to the MHT in conference with the psychiatrist and a diagnosis and treatment plan is agreed upon. The psychiatrist makes the diagnosis and oversees all clinical work providing supervision on every case. Plans for treatment might include a follow-up monitoring schedule, medications, behavioral modification recommendations to MPs, and consultation to appropriate medical providers.

Monthly follow-up evaluations are performed to determine the effectiveness of the mental health treatment plan and provide supportive counseling. The evaluations allow for clarification of the diagnosis, assessment of the effectiveness of medication, and determination of the need of continued psychological services. These follow-up evaluations are also done "through the wire". The monthly evaluations serve as the basis for continuing treatment.

If medications are needed, the detainee is included on the daily medication administration rounds. When TF Med 115 began to provide mental health care services, the effectiveness of psychotropic medications was found to be inconsistent due to the high rate of non-compliance. Due to lack of detainee interest and misunderstanding of medication importance in their mental health treatment plan, compliance rates remained low. Since the MHT started administering psychological medications, the compliance rates have been maintained at over 95%. An additional positive factor that results from this medication contact is the on-going psychological evaluation and emotional support given to detainees. During medication administration rounds, detainees can request psychological services and detainees displaying psychological symptoms can be assessed and noted for a mental health evaluation.

A CID occurs when an incident of significance occurs and the personnel associated with the event have an opportunity to emotionally process the event. The first critical incident, after our arrival at Abu Ghraib, occurred when a detainee was killed in the camps by a stray round that came from outside the FOB. The MHT was invited into the detainee tent and was greeted warmly. All the detainees in the tent participated and expressed sadness at the incident as a whole, but as is common in this culture, it was accepted as something that was "willed by Allah." Every detainee was given an opportunity to communicate their reactions and feelings about the incident. The debriefing also included the MPs that were in charge of the area at the time of the incident. The MPs found the debriefing helpful to process the incident and were surprised that they were experiencing the same reactions as the detainees. The debriefing was the first one combining detainees and troops.

An emergency situation arises when a detainee becomes acutely psychotic or suicidal. The MHT is on call 24 hours a day for emergency evaluations. The detainee is seen and the case is staffed with one of the licensed mental health providers. The appropriate interventions are carried out along with recommendations to the medical staff and MPs for continued monitoring and management of the detainee.

The cooperation of the MPs is paramount to the psychological mission here at Abu Ghraib. In addition to the care given by the MHT, the MPs consistent management of detainees is essential to the success of the psychological treatment plan. The services that are provided are very much appreciated by the MPs who realize that they can call on the MHT for any situation concerning a questionable action by a detainee. Because of the collaborative working relationship between the MHT and the MPs, the MPs are better able to manage detainees with behavioral problems.

TROOP MENTAL HEALTH CARE

With the frequent contact with the detainees by the MHT, there is an opportunity to interact with the MPs. The frequent interaction with the MPs in the camps allows a period of respite from the constant grind associated with this type of work. The mere presence of a MHT member can allow MPs to share stories of the constant wear and tear on the emotional psyche of the Soldier. The MPs realize that if they need to vent or have psychological issues, they can approach any member of the MHT.

The Combat Stress Team members that provide mental health care for the troops also have experience dealing with detainees. This serves as an advantage when dealing with the troops who realize that they have a caregiver who is aware of the situation that they are involved in. The Combat Stress Clinic is located on the FOB and is responsible for the well-being of coalition troops that are assigned to Abu Ghraib. Combat services include typical outpatient therapy, command-directed mental health evaluations, emergency evaluations and evacuation recommendations, command consultations, CIDs, stress debriefings, mental health classes, and morale contacts.

Outpatient combat stress therapy is available in the Combat Stress Clinic. The process of beginning therapy starts with a troop self-referring or a command-directed evaluation. The services are provided by a psychiatrist, a psychologist, a social worker, a nurse, or a mental health specialist under supervision of a licensed mental health provider. A full mental health assessment is done in the office and subsequent appointments are made to continue therapy and assess current treatment plan and effectiveness. Therapy is used to help deal with deployment issues, family issues, and to help cope with psychiatric illnesses. These services are continued until the individual no longer needs or wants services, or the individual leaves the AOR.

A command directed mental health evaluation is derived from a commander being concerned about one of their troop's mental health. The troop's behavior has come into question and the command may wish to explore avenues to appropriately treat or deal with the troop's issue or remove them from the theatre of operations as a last resort. The troop comes in after being told of this procedure and, in some cases, may not be happy about the referral to the Combat Stress Clinic. It is essential to quickly develop a rapport with the troop to put them at ease to assist in determining the proper diagnosis. The recommendation is based upon the diagnosis and what is best for the troop. It may include return to duty, possible duty reassignment, early redeployment if possible, or recommendation of administrative separation. The results of the evaluation and the recommendations are sent to the commander. The ultimate course of action regarding the troop's well-being lies with the commander.

Command consultations are discussions between the mental health care provider and the command regarding a wide range of topics. Discussions can be regarding an individual troop and the mental health care recommendations. Another topic for command consultation is unit climate and overall unit mental status. This can be very important to the commander to help lead their troops. Also, command consultations can be used to help teach a commander better techniques to deal with unit level stressors and individual troop stressors.

The CIDs are a vital element of Combat Stress Control in a theater of operations. One example of a traumatic incident at Abu Ghraib, in Oct 04, was a mortar attack that occurred with several soldiers injured, to include one seriously injured from shrapnel. The Combat Stress Team reacted to the event by conducting a CID. During the debriefing, troops were given time to discuss the incident and processing their physical and emotional reactions toward the incident. Another incident, in Feb 05, occurred when troops had to use lethal force in providing security outside the FOB. The lethal force was used toward a threatening vehicle and the driver was killed. These troops had never previously engaged in a real-life hostile situation. These two incidents serve as brief examples of critical situations troops are dealing with throughout the entire AOR.

If an emergency situation occurs with a troop, there are procedures to evaluate and evacuate him/her from the area of operations. A health care provider usually recommends the evacuation, and it occurs with relative ease. In the case of a psychiatric patient, the parent unit of the troop has to provide an escort and they are usually sent back to Landstuhl Army Medical Center in Germany for further evaluation and observation. If needed, they are sent to Walter Reed Army Medical Center in Washington, D.C.

Stress debriefings are performed by the social worker. In these debriefings, the service member is acquainted with the issues that are pertinent to this mission. One ironic example comes to mind. When a new group came to this site, they questioned the heightened security of the FOB. "Why can't we go outside the FOB?" They were enlightened, during this brief, to the dangers of the area and were more accepting of the austere conditions and protective posture. They were even more open to these protective measures after a mortar attack

during the briefing.

Classes are conducted on issues related to redeployment, stress management, and dealing with loved ones during and after deployment. One unit, prior to redeploying to the States, was especially proactive in the redeployment segment. The commander, realizing that these same classes would be given at Fort Dix, NJ, opted to get the classes done in a combat environment to initiate better understanding of the material. In this way, the Soldier was aware of the information and could begin processing it.

When psychotropic medications are dispensed to the detainees, contact is made with a number of MPs out in the wire. This contact can be a discussion of stressors and gives the troop an opportunity to ventilate their current frustrations. A morale contact can be as simple as a check on the morale of the troop, or a greater problem may present itself. This may involve further conversation and referral.

In addition, morale contacts are done on a weekly basis by the psychologist who spends several hours during their work shift to walk around the FOB and talk to the troops. These are considered as stops in the guard towers surrounding the detainee camps and other remote locations located around the FOB. In Dec 04, the MHT performed a morale information blitz that allowed all troops to become familiar with combat stress services. This blitz helped reduce the stigma of seeking services and informed U.S. personnel of the location of the clinic.

THE IRAQI DETAINEE

The mission at Abu Ghraib is very different from other sectors in the AOR. The key focus is detainee operations and U.S. troops are required to provide them medical care, security, and fulfill their basic needs. Thus, the detainee is the center of the mission. These detainees also undergo struggles and stressors that will lead to the need for mental health care. These struggles are based on two factors: the Iraqi culture and language, and the guard-detainee relationship.

IRAQI CULTURE AND LANGUAGE

The MHT has done interviews with the contracted translators and detainees. Through them, the MHT has learned important insight into the Iraqi mind-set. Some Iraqi detainees display personality characteristics that are very different than seen in the American culture. We will further elaborate on different topics.

Some male Iraqi detainees, for example, see smoking as a right and not a privilege. Some detainees have been interviewed who smoke up to four packs of cigarettes a day. The conflict occurs almost immediately when the detainee is brought into the IHA, with no smoking privileges there. The detainee will often ask the MHT for a cigarette. Once they get to the detainee camps, the MPs usually give one to two cigarettes after each meal. More cigarettes can be earned by doing work detail or being a camp helper. The MPs use cigarettes as a positive reinforcement tool for appropriate behavior. The struggle commences when cigarettes are removed by the MPs for disciplinary purposes. Several detainees have threatened suicide over MPs not giving them cigarette privileges.

A common suicidal method threatened by the detainees is electrocution, hanging, or self-injurious behavior. Typically, Iraqis have a disdain for suicide that is primarily rooted in their Islamic religious beliefs. When detainees would threaten suicide, the MHT would take this very seriously and needed to evaluate if this was a manipulation tactic.

According to an Iraqi doctor, one of the more common methods of suicide in the general population in Iraq is to douse themselves in oil or gasoline and set themselves on fire. Due to a very different viewpoint and common methods of suicide found in Iraq, psychological services are needed at Abu Ghraib to assess and determine the true mental state of the detainee population. One of the primary reasons for a detainee suicidal gesture is to get something desired. There was a tendency by some detainees to view psychology as a means of getting what they wanted.

Medication is another desired item which some detainees will attempt to manipulate others to get. Medications, such as Artane and Valium, are readily available for sale on the streets of Iraq and at local markets. These are often used as commonly as Americans use Motrin and Tylenol. Many maladies are thought to be curable with the use of these two medications. When detainees are brought to Abu Ghraib and processed, questions are asked about illicit drug use, and more often than not, a negative response is given. But some detainees will state that they are using Valium or Artane, and there is no stigma associated with these addictive substances. Sometimes detainees will request to be placed on these medications. They need to be educated that these medications are not used for their current problem. Some detainees expect medication from the medical staff, and if they don't get what they want, some detainees tend to manipulate to get the objects of their desire.

This manipulation and histrionic behavior has been seen first-hand among the detainees. For example, a detainee may be interviewed and things will be going smoothly. Even if the situation remains calm, there is a dramatic use of hands and a loud voice prevails. But if the wrong question is asked, then a total shift in behavior with wild antics, yelling, and a possible move to suicidal gestures can occur. A suicidal gesture can be made over something small and has to be judged whether this is a cultural or behavioral issue. The MHT has needed to assess these issues.

As part of dealing with the Iraqi culture, the Arabic language proved to be another difficult stumbling block to overcome. This barrier was overcome with the use of contracted Arabic translators as well as detainees who learned English. Surprisingly, communication was good for basic needs. For more extensive needs, the message could be lost in the translation. The interview process was handled often with the interviewer and the translator on one side of the fence and the detainee on the other side.

The education level of some Iraqis also served as a barrier to the mental health examination. At times, it was found that some Iraqis had a very low educational level and some of the questions would be misunderstood, despite the translator's attempt to simplify it as much as possible. Despite the limited education, the MHT was able to make ourselves understood enough to get the information necessary to communicate effectively.

The Iraqi culture has many nuances that must be understood in order to care for Iraqi detainees. A large part of the mental health mission at Abu Ghraib was determining whether detainee actions were cultural, psychological, or behavioral issues. With the detainee being the center of the mission, the Iraqi culture becomes inherently entrenched in the mission.

GUARD-DETAINEE RELATIONSHIP

There have been times during a detainee interview that the question arose from the detainee: "Why am I here?". Perhaps this is one of the toughest to answer. This personal cry for help affects not only the MHT, but the ones tasked to provide security and safety: the MPs. The detainee sometimes has a misunderstanding of the relationship towards their guards.

The MP may be the only connection to the outside world that the detainee has. This means that the MP is seen as the person most associated with internment. If a detainee goes anywhere on the FOB, the MP is there at all times. A call for the medics has to be initiated though the MP. Any movement throughout the camp, hospital, or FOB is done by MP escort. At family visitation, an MP monitors the entire family visit. Finally, a MP convoy to the detainee's home area ensures their safe return home. The MP is their gatekeeper.

With the importance of the MP-detainee relationship, there are areas of distrust that naturally occur. Some detainees see a U.S. troop as occupiers of their country, and are bitter toward them no matter how well they are treated. There is a history of general hatred and distrust toward the U.S. and the ideals that the U.S. stands for. The Saddam Hussein regime tried to ingrain this thought process in the Iraqi people. There is a natural conflict that exists between a guard and a detainee. On one hand, they are there to care for the detainee, on the other, they act as a disciplinarian.

Upon first arrival to Abu Ghraib, the detainee is placed in the IHA for processing. A few detainees are, at first, very timid due to fear of reprisal. The detainee is often aware of the period Saddam Hussein used torture tactics and that he would not be leaving the prison anytime soon. The suspicion continues until they are taken to the detention camps. Only after some time passes, do they realize that the MPs serve as protectors.

With our continued presence in Iraq, there will be a need to detain persons that would harm us given any opportunity. The MPs serve as protectors and guards for the detainees. Perhaps one of the toughest jobs in Iraq today, they serve with distinction and honor. The detainee-guard relationship will remain stressful, to completely understand, for detainees and troops..

AMERICAN TROOPS AT ABU GHRAIB

Placing American troops at Abu Ghraib to detain insurgents presents several unique situations that attribute to the need for mental health care for troops. The situations that apply to the FOB are the Iraqi culture and language, the guard-detainee relationship, and the current ongoing war-time scenario. These three factors greatly affect the troop population in job performance and on a personal level.

The job performance is relative to the troops' job here at Abu Ghraib. One thing that can diminish is the heightened sense of awareness. This can possibly lead to detainee escapes and a loss of purpose, and the decrease in awareness can lead to mission failure. The personal effects can have an impact on the rest of the troop's life. The effects are related to the length of time the troop is deployed to the AOR and the intensity in which they experience these factors. Often, Abu Ghraib is the only place the troop will see for his entire stay in Iraq. Deployment lengths vary from 4 to 6 months for the Air Force, 7 months for the Marine Corps, and 1 year for Army personnel. We will discuss the effect of the Iraqi culture/Arabic language, guard-detainee relationship, and the ongoing war-time scenario.

When the troop first comes to the AOR, he is exposed to differences between the cultures. Even though the Army educates the troop on cultural awareness, nothing can truly prepare them for the major shift to an Islamic-based system of beliefs. Interactions with English speaking detainees and Iraqi workers help provide a jumping-off point for this knowledge. Much of their knowledge of the Islamic culture and people will improve with time, but the troops still have to provide a secure atmosphere.

The MP is expected to maintain security and accountability in the compound and, at the same time, advocate for the detainee's well-being. The MP must stand guard to assure that the detainee does not escape the camp but, at the same time, must intervene within the detainee camp in case of imminent danger. This interaction with detainees has been found to be wearing on the troops psyche.

Each day is completely different. There are a number of places and appointments that require complete MP supervision. Head count three times a day, sending detainees to medical and dental appointments, family visits, military intelligence appointments, or court appointments are all examples of MP supervised activities. Every day can be a potential powder keg. But after gaining a more collaborative relationship with the camp leadership, the MPs make this work and head off potential explosive events as much as possible. This is a fine line that the MPs must walk every day, and it all occurs within the detainee camp setting. Meanwhile, outside of the FOB, the insurgents continue their work of attempting to disrupt the mission at Abu Ghraib.

We deal with potential risks at any given moment. At any time, the mission can be disrupted by an improvised explosive device, small-arms fire, rocket-propelled grenade, mortar attack, and attempts to overrun the compound. Living and working in this FOB causes a constant higher sense of alertness. There is a saying around the FOB which applies to the entire country: "Stay ever vigilant."

The MHT is in close proximity of these detainees. We often interview the detainee while wearing an individual body armor vest and Kevlar helmet. This is just another sign of the ever-present potential for a war-related incident. After a number of months on ground and frequent close contact with detainees, some have never seen us with a weapon in our hand and are surprised that we have one readily available for use. This wartime operation readiness and the current detainee operation mission at Abu Ghraib are a dichotomy that can lead to additional conflict.

NEED FOR CARE

Prior to TF Med 115's arrival in theater, mental health care could not be fully addressed. This was due to the limited numbers of personnel that were assigned to the previous medical facility. The hospital has been fortunate to have a dedicated MHT that can provide services to detainees and troops. To date, we have had over 30,000 detainee mental health contacts.

The MHT at Abu Ghraib has done all of this with only twelve personnel. We are a welcomed and well-utilized asset for the detainee operation mission. The unique stressors and struggles posed to both detainees and troops mandate the need for mental health care.

CONCLUSION

We have discussed the Abu Ghraib Internment Facility and its effect on the overall detention mission in Operation Iraqi Freedom. With the mental health care picture for returning troops predicting a 1 in 6 troop need for mental services, the Army has a perfect asset to help alleviate the problem areas. Interventions with troops can begin while in theater and be a preventive measure to target and prevent mental health issues. Mental health care is absolutely essential

for mission completion and success.

With continued high-tempo operations, the mental health of troops has to be taken very seriously by the Army. The Army understands that if we are able to maintain a healthy fighting force in theater, the mission is easier to complete. And this may be the most beneficial issue the Army can invest in: the psyche of the American troop, thus ensuring the AMEDD motto of "Conserve the fighting strength."

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Ethical Issues in a Combat Support Hospital in Support of Operation Iraqi Freedom

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Introduction

I recently returned from having spent 5 months working as a nurse in the Emergency Room (ER) in a field hospital in Iraq. While there, we cared for U.S. Soldiers, contract civilians, coalition forces, and civilian emergencies. We were faced with ethical dilemmas each and every day while caring for these patients. Some of the issues that arose are some of the same issues that may be experienced in a civilian hospital in the U.S. Many of the issues that we faced, however, are unique to a deployed environment and unique to the military.

Case Scenario

We received the call over the radio at 0350 that we had a possible 3 to 4 urgent patients on their way: one chest injury, one gun shot wound to the leg, one child with unknown injuries, about 8 years of age. We were having a sand storm at the time, which precluded use of a medevac helicopter, so the patients were brought in by field ambulance. When they arrived, an hour and a half later (for a total of 3-hour transport time), we received a 13-year-old male with a gun shot wound to the abdomen and right flank (patient A), a 50-year-old male with multiple superficial gun shot wounds to the chest and right upper arm (patient B) and a 50-year-old male with gunshot wounds to bilateral thighs (patient C). These were Iraqi civilians that had been shot by our Soldiers during a night raid. Upon arrival, we did not know if they were bad guys or innocent bystanders. Patient A (the 13-year-old son of patient C) was treated with pain control, antibiotics, and tetanus. His chest x-ray and abdominal ultrasound came back negative, however, he was the first to go back to the operating room (OR). Patient B was treated with pain control, antibiotics, and tetanus. His wounds were irrigated, his arm splinted, and he was admitted to the medical surgical unit while awaiting the OR. Patient C (the father of patient A) was intubated immediately upon arrival to the ER. He had tourniquets to his bilateral lower extremities; however, he was continuing to bleed through the pressure dressings that we continuously reinforced. He was hypotensive, tachycardic, and his initial hematocrit and hemoglobin upon arrival to the ER were 1.9/5.7 (normal is 12-18/27-52). He continued to remain unstable, despite 13 liters of crystalloid and 10 units of packed red blood cells over the next 2 hours in the ER, while waiting for the OR to become available. While in the OR, the patient remained hemodynamically unstable. The laboratory activated the whole blood donor system and the patient received an additional 4 units of packed red blood cells, 4 units of fresh frozen plasma, and 3 units of whole blood. Patient C received bilateral above the knee amputations and was admitted to the intensive care unit (ICU). While in the ICU, he continued to receive blood products and blood pressure medications. He had progressive cardiopulmonary failure and multiple organ system failure. On post-op day one, he went into cardiopulmonary arrest.

Variables of the Dilemma

Futility of Care. Patient C had gun shot wounds to his legs with bilateral arterial bleeding. He had lost a significant amount of blood in the 3 hours prior to his arrival, and was continuing to exsanguinate through his tourniquets in the ER. His vital signs were unstable and he was clearly in shock. How much time, resources, and supplies do we use on someone who is very likely not going to live?

Distributive Justice. During the time period where we received these patients, our supplies lines were very unstable. We did not know if and when they would be cut off for good. Due to the political unrest during this time period, our food supply had already been cut off. We had to eat meals ready to eat and T rations for our daily meals. Although we were still able to receive medical supplies via air, we were unsure if and when we would no longer be resupplied. Because of this, it was imperative that we carefully considered the best utilization of our resources. We always had to be prepared for a mass casualty (MASCAL) scenario (which happened quite often), so we did not want to use all of our supplies on one patient, thereby leaving no supplies for our future patients. With patient C, how many resources should we have used on him? During his entire stay, he utilized 14 units of packed red blood cells, 4 units of fresh frozen plasma, and 3 units of whole blood. Would there have been enough blood available for future patients, had there been a MASCAL? The primary mission of our Army hospital is to care for Soldiers. What if we had used all of our resources on an Iraqi civilian, so that there weren't enough left when a U.S. Soldier came in for care? Once you start resuscitation on a patient, who is very likely not going to survive, when do you stop? When should the cessation of care be considered?

Whole Blood Donation. The whole blood donation system was initiated for patient C while he was in the OR. During the whole blood donation, hospital personnel and local soldiers with a certain blood type are asked to donate for immediate patient needs. Once a person donates, that person can no longer donate again for 56 days. When we first initiated this procedure in our hospital, we had to decide if it was compulsory or voluntary. Also, did the donors have the right to know who the blood was going to? Did they have a right to refuse to donate blood for local nationals or detainees? It was decided that was voluntary and that the donors did have a right to refuse to donate. It is a dilemma for the donors as well. If a donor donates his or her B+ blood to a local national today, what if a Soldier comes in next week requiring B+ blood and none of the hospital staff are able to donate because they already have?

Triage. In a MASCAL scenario, the Army triage categories are Immediate, Delayed, Minimal, and Expectant. When a lesser number of patients are being evaluated, triage is modified and all possible lifesaving measures are utilized based on hospital resources and capabilities. In trauma scenarios, it is the surgeon who ultimately decides which patient requires operative care first. In this case, the surgeon decided that the child should go before his critically, unstable father. Children are more susceptible to complications with even slight changes in their fluid status. Even though his x-rays and ultrasounds did not reveal internal bleeding, it was still feasible that he had undetectable bleeding within his abdomen or pelvis. This undetectable blood loss would put him at increased risk for a potentially bad outcome. Perhaps the surgeon had classified the father as expectant in his mind and knew that he was most likely not going to survive. If so, then why utilize all the resources (IV fluids, blood products, dressings) on a patient who was not going to survive? Who should have gone to the OR first that day…the father or the son? Was the surgeon right in choosing the son? Would it have made a difference in the father's outcome?

Standard of Care. Do local nationals and U.S. Soldiers receive the same standard of care? Should local nationals receive a minimum of the same standard that they would receive on the local economy? Legally and morally are we obligated to give the same standard of care?

Review of Literature

A survey of 600 Army and Navy physicians who served in the Gulf War was conducted to assess the ethical concerns prevalent in a combat scenario. The results indicated the following prominent ethical issues: access to care and triage, balancing goods and harms, resource allocation, determining the standard of care appropriate for the population, environment and wartime context, accepting the limitations of austere utilitarianism, and the definition of medical futility.[1] Clearly, many of the ethical issues within the afore mentioned case scenario are the same issues that were dealt with during the Gulf War and in previous armed conflicts.

Futility of Care. In Carter's survey, futility of care was a significant concern mentioned by the physicians. There were many contributing factors for this concern to include: limited resources and interventions, overwhelming patient condition, and perceived military or political constraints on humanitarian actions.[1] According to the Code of Ethics for Emergency Physicians, emergency physicians must keep the patient's interest as a primary concern, while recognizing that inappropriate, marginally beneficial and futile care is not morally required.[2] Applying this to Patient C above, considering the seriousness of his condition, the patient care that he received went above and beyond what was morally required. It has been well documented that immediate treatment and evacuation of casualties unquestionably improves patient survival.[3] Because of his prolonged transport time, resulting in delayed resuscitative care, patient C's survival rate was severely diminished.

Distributive Justice. Distributive justice was another factor brought up by physicians in Carter's survey. This was perhaps most apparent in the more front line positions, where equitable distribution of expendable goods and medicines, litters, beds, evacuation capabilities, medical personnel and services became crucial in extending medical logistical support to massive numbers of Soldiers positioned over a huge desert frontier.[1]

Clasper and Rew assert that in a wartime environment, that "resources for care of trauma must be optimized for the many, rather than dispersed for the few."[3] Again, in the case of patient C, it could be argued that too many resources were utilized on one person.

Triage. Moskop discusses the juxtaposition of military physicians in providing patient care in a military environment. Military physicians assume one set of obligations as physicians, including obligations of beneficence, nonmaleficence, and respect for autonomy. They assume another set of obligations as members of an armed service, such as maintaining combat readiness and maximizing the fighting strength of the force.[4]

Military health care personnel, on a daily basis, are forced to choose between their military obligations and their obligations as health care professionals. Normally, triage would occur solely based on medical necessity, however, "when regulations or orders demand it, military physicians may be forced to give their military obligations priority, no matter how strong their moral conviction that medical considerations should

take precedence in a particular situation."[4] The medical officer often faces the dilemma that he or she, by understandable emotion and sympathy, likes to give priority in treatment to his or her own party's patients and to sidetrack the others. From an ethical point of view, however, the military medical officer should give priority to medical aspects only, meaning that he or she should not (even when ordered) give priority to his own party or make distinctions between military ranks.[5]

The Geneva Convention indicates that all wounded should be treated humanely and cared for without any discrimination in regard to sex, race, nationality, religion, or political affiliation. It also states that only urgent medical reasons will sanction priority in the order of treatment of wounded patients.[6] According the military triage categories, if patients are expectant, they are provided with comfort measures and are re-evaluated once all other patients have been cared for. "Military triage policy sometimes reverses the natural inclination of nurses to provide nursing care to those who are the sickest or most in need of care."[7] For often, the most seriously wounded are categorized as expectant and become the lowest treatment priority. In the case of patient C, he was triaged medically by the trauma surgeon. We attempted to provide life sustaining measures for the patient, until definitive care could be provided (bilateral amputations in the OR). Once the higher priority patient had been cared for, then patient C was then able to receive definitive care.

Standard of Care. According to the Geneva Convention, all patients should receive the same standard of care without discrimination. Standard of care in a wartime environment, however, is different than accepted standard of care of western medicine. "Perhaps one of the most difficult adjustments for any physician to make in preparation for war is that of determining the appropriate standard of care in a given environment with limited resources."[1] Whatever standard that is able to be given within the constraints of resources, supplies and staff ability, should be given indiscriminately to all eligible patients, regardless of race, nationality, religion, political affiliation, friendly, or enemy.

The review of literature had very little information regarding military nurses and ethical decision making. There was, however, one article that discussed Moral Distress among military nurses. Fry described two domains of military nursing distress: initial military nursing moral distress and reactive military nursing moral distress. Initial military nursing moral is described as a psychological disequilibrium experienced when nurses are unable to carry out their desired moral actions because of barriers and the negative feelings that arise from this disparity. Reactive military nursing moral distress is described as the continuing moral distress, when nurses are unable to overcome the barriers posed during the initial moral distress phase, and the long term physical and psychological that result from unresolved internal conflict.[7]

The review of literature confirmed that ethical issues that arise during armed conflicts are consistent among medical units. The issues of triage, distributive justice, standard of care, and medical futility, are prevalent in the austere setting of a Combat Support Hospital in a hostile environment. Army Nurses can utilize the ANA Code of Ethics, the Geneva Convention guidelines, and Army doctrine to help guide them in making ethical decisions. Army Nurses must work through the ethical dilemmas that they face daily to help prevent reactive military moral distress from developing, which could render them ineffective in performing their job.

Perspective of the Advanced Practice Nurse

The Advanced Practice Nurse (APN) has a unique, yet critical role in the military nursing environment. Although the APN may have a supervisory role or may be working as a practitioner, he or she is always first and foremost a registered nurse. When traumas come in, he or she may help triage the patients or work as a member of the trauma team. Although doctrinally, the APN is not the one normally assigned to triage patients, in reality, he or she may very well be the one deciding which patients are immediate, delayed, minimal, or expectant. As discussed above, the military triage system reverses the natural inclination of nurses to provide nursing care to those who are the most seriously wounded. Depending on the number of casualties and the availability of resources, a critically wounded patient might be categorized as expectant. This immense responsibility and inability to care for a critically ill patient may lead to internal conflict resulting in moral distress. The APN must recognize this psychological disequilibrium and work through it to help prevent it from becoming a reactive moral distress.

As a member of the trauma team, the APN can utilize his or her advanced nursing and critical thinking skills in caring for the patient. He or she can advocate for the trauma patient in providing comfort, pain control, privacy and respect, when the patient is unable to advocate for him or herself. As exemplified in the case scenario, many ethical dilemmas arise during a trauma scenario. Many of these dilemmas are caused by barriers that are out of control from the nurse's realm of intervention (limited supplies, physician judgment and orders, military policies of triage and patient care). The nurse can do the best that he or she can to make a difference in the aspects of patient care that he or she does have control over.

As a leader, the APN can also help Army Nurses to identify and work through the ethical dilemmas and situations that they have faced, which have the potential to trigger moral distress within themselves. A deployed nursing environment is a

very unique, high stress environment. Deployments usually last from 6 months to a year, during which Army Nurses face danger, care for massive numbers of battle casualties and deaths, and are away from their normal support systems. It is imperative that nursing staff remain healthy, both physically and psychologically, so that they are able to effectively take care of critically ill patients at a moments notice. Allowing nurses to have a forum to discuss ethical dilemmas that are faced and their feelings and frustrations related to those situations is imperative in maintaining a healthy nurse corps. This interchange of feelings and ideas will help to prevent nursing staff from developing reactive moral distress.

The APN is also responsible to ensure that care provided is free from discrimination. The ANA position statement on Discrimination and Racism in Health Care is working to eradicate discrimination and racism from the profession of nursing. Discrimination includes, "making a difference in treatment or favor on a class or categorical basis."[8] Discrimination in a wartime environment could seem like an easily justifiable position. When taking care of someone who has just killed six of your Soldiers, it would seem easy to have negative feelings toward this person and to feel like they did not deserve to be cared for. These feelings are easy to propagate and not so easy to look beyond. Although only eluded to in the survey results, one of the physicians from Carter's survey discusses this very difficulty, we had a difficult time remaining objective toward the EPWs once we saw the massive numbers of women and children slaughtered by the (Iraqi) Republican Guard. Toddlers were stabbed repeatedly...once we saw this, the EPWs were treated (emotionally) with some distance. Appropriate medical care was never withheld, however.[1] Although it may seem daunting at times, it is imperative that all patients, as human beings, are treated as such. The ANA Code for nurses reiterates this obligation, along with the Geneva Convention. This is required of the APN and the APN must require it in the nursing staff under him or her.

Ethical Framework

Johnstone's Moral Decision Making Model. Johnstone's moral decision making model provides a theoretical framework for assessing and implementing moral decisions.[9] This model consists of five steps. (1) Assessing the situation entails critically reflecting on the situation. (2) Identifying moral problems includes recognizing ethical issues derived from the situation. (3) Setting moral goals and planning moral action involves planning courses of action to address the problem. (4) Implementing moral plan of action requires executing the proposed strategy. (5) Evaluating the moral outcome is used to clarify the problem and resolve it. This model will be utilized to evaluate the ethical dilemma of the case scenario regarding whole blood donation.

Assess the Situation. A critically ill 50-year-old Iraqi male is in the OR. He was shot in his legs bilaterally and has lost a significant amount of blood. He already received 10 units of packed red blood cells in the ER, but is in need of whole blood for the clotting factors. If he does not get the whole blood, he will die. Even if he does get the whole blood, he is so critically injured that he may die in spite of receiving the whole blood. The patient's blood type is B+. A request has been put out for anyone with B+ blood to donate blood for this patient. Captain Doe is B+ and must decide if he will donate blood.

Identify Moral Problems. The patient was shot by U.S. troops. It is unclear whether this patient was an adversary or an innocent bystander. If CPT Doe decides to donate blood for this Iraqi civilian, he will not be able to donate blood again for another 56 days. That means if a U.S. Soldier comes in requiring B+ blood, that he will not be able to donate. Since there are only a limited number of staff members with B+ blood, if they all give, then there will be no readily available B+ whole blood donators for future casualties. Because the patient is so critically ill, the patient may die anyways, in spite of having received CPT Doe's blood.

Set Moral Goals and Plan for Moral Action. The patient in the OR is human. He is a father. His son is also a patient in the hospital. Captain Doe has a son at home. If it was him, he would hope that somebody would donate blood for him to help save his life, so that he could see his son grow up. If a U.S. Soldier comes in and requires B+ blood at a later time, the hospital can always call over to other units on post to ask Soldiers to donate blood. Soldiers are usually willing to donate blood to save the life of another Soldier. Captain Doe has decided to donate blood to this critically ill patient.

Implement Moral Plan of Action. CPT Doe went to the laboratory to donate blood. During the 10 minute procedure, a runner from the OR came in twice to check on the status of the blood. This reinforced to CPT Doe the importance of his decision to donate blood.

Evaluate Moral Outcomes. CPT Doe found out that the patient died the next day, in spite of having received the whole blood. Captain Doe was glad that he donated the blood to try to save the patient's life. Had he not donated the blood, he would never had known if that would have made the difference in the patient living or dying. It is also what he would have wanted for himself had he been in the same situation.

Conclusion

Ethical dilemmas in a deployed military setting are unique and abundant. Johnstone's moral decision making model is an excellent tool to help work through the process of assessing

and implementing moral decisions in healthcare within the military milieu. The ANA code for Nurses, the Geneva Convention, and Army doctrine all provide guidelines that can be utilized in caring for patients in a wartime environment. Steps must be taken to help identify and prevent moral distress within nursing staff. It is imperative that nursing staff remain physically and psychologically prepared to continually care for trauma patients. There are no right decisions in dealing with ethical situations, simply the best decisions that you are able to make within the context of each scenario.

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Designing a Medical Humanitarian Assistance Course for Advanced Practice Nurses in the Uniformed Services

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The U.S. uniformed services frequently respond to natural and man-made disasters worldwide. Disaster management and humanitarian assistance has been a major focus of military medicine for well over a decade. Training for these missions is a priority for the U.S. military, specifically as a result of the Gulf War. The Medical Humanitarian Assistance Course for advanced practice nurses is a course available to train advanced practice nurses in disaster management and humanitarian assistance. This article will describe the evolution, design, format, and implementation of the Medical Humanitarian Assistance Course.

Introduction

Nurses have undertaken nontraditional roles in advanced practice for over a century. An example is the delivery of anesthesia that nurses first began in 1887 at St. Vincent's Hospital in Erie, Pennsylvania.[1] Nurses have earned advanced degrees since the early 1950s. However, the role of nurse practitioner did not come about until 1965 at the University of Colorado. It was there that the role of the Nurse Practitioner was formally recognized. At the University of Colorado, nurses began to work collaboratively with physicians to identify symptoms, to diagnose, and to manage health problems in children.[2]

Advanced practice nurses (APNs) have become an integral part of the military health care system as evidenced by the role of the nurse anesthetists, who have been part of military medicine since World War I.[1] In contrast, only since the 1970s have the nurse practitioners been integrated into the military health care system. Additionally, the role of the nurse practitioner in deployed situations is currently evolving.

Purpose

To prepare for disaster management and humanitarian assistance (DMHA) missions, APNs must have the proper education and training to function in adverse and complicated environments. The purpose of this project was to develop and evaluate a course for preparing APNs to function in DMHA missions.

Background Information

Current U.S. policy endorses humanitarian interest as a justifiable reason to deploy U.S. military forces.[3] Emergency conditions such as natural disasters and humanitarian disasters also require the deployment of U.S. military forces.[4] Thus, APNs, such as family nurse practitioners (FNPs), have been and will continue to be deployed and used in DMHA missions.

Man-made or natural disasters bring death and destruction. Examples of natural disasters include cyclones, hurricanes, floods, earthquakes, and famine caused by drought. Man-made disasters usually involve governmental infrastructure degradation due to military conflicts/wars, operations other than war, or terrorist attacks. This destruction leads to hunger, disease, lack of potable water, and poor medical care for displaced persons.

Since Desert Storm, U.S. military forces have participated in many humanitarian missions. Examples include ongoing peace enforcement missions in Bosnia and Croatia, disaster relief in Rwanda, and humanitarian assistance in Somalia as well as in Afghanistan. Humanitarian missions rely heavily on the ability to deliver primary care. Physicians, nurse practitioners, and physician assistants deployed in DMHA missions use a team approach to the delivery of primary care. Historically, by the time military medical units arrive, the emergency phase of a disaster has past and there is an emphasis on primary and preventive care.[5] FNPs are well suited to deliver primary adult, obstetrical, and pediatric care, and with additional training, they can effectively transition to a DMHA environment.

The U.S. military possesses the unique ability to rapidly deploy manpower and equipment throughout the world. U.S. military forces perform at superior levels because they bring an intact organization and structure that no other agency can match.[6] The military also possesses the unique ability to maneuver in areas without established roads, bridges, or other infrastructure.[7] Military medical resources may be one of the first to arrive in an area of disaster. Those who respond to disasters need to be able to fill specific roles while maintaining a certain degree of flexibility.[8] FNPs provide a great degree of flexibility because of the nature of their training. Military medical units, which include FNPs, are required to provide care in a variety of settings including local civilian populations as demonstrated in missions in Honduras, Iraq, and Bosnia. The U.S. public health FNP can become a member of the commissioned corps readiness force. This group of qualified officers can be mobilized in response to natural or man-made disasters such as the New York terrorist attack and Virgin Island hurricane in 1995. Humanitarian missions rely heavily on primary care providers. This emphasis on primary care and public health issues creates an environment that is more like a community clinic than a combat zone.[5]

The education FNPs receive in their academic programs prepares them for the role of a primary health care provider. In a recent study, FNPs reported being trained to handle the most common primary care complaints such as upper respiratory infections, gastrointestinal problems, and musculoskeletal problems seen in DMHA missions.[9] Prior to the opening of the Uniformed Services University of the Health Sciences Graduate School of Nursing in 1993, few academic programs offered specific instruction in humanitarian assistance as part of an FNP curriculum. Data from military FNPs deployed in DMHA missions indicate that FNPs lack training in planning, conducting, and executing a DMHA mission. For example, FNPs have limited knowledge in the role and function of nongovernmental organizations like the American Red Cross.

Professional development courses for military officers, such as the U.S. Army Medical Department Officer Advanced Course, includes basic logistical, command and control instruction; however, there is limited content offered on foreign relations, the roles of nongovernmental organizations, and specifically DMHA missions. Until recently, this has not been a focus for military medical doctrine so there is limited teaching on standing operating procedures, contingency plans, basic instructions, or field manuals that specifically address DMHA.[6] Sharp et al, also recommend developing a readily accessible consortium of health care planners, logisticians, and commanders who have experience or training in emergency relief and DMHA missions.[6]

Bissell et al, recommend specific training for personnel, especially doctors and nurses.[10] The authors' state, "None of the providers, by virtue of their basic training, is well equipped to manage the health consequences of disasters, but nurses and physicians should be able to easily move into the role" (p 285).[10] The authors maintain that the goal of disaster medical response planners is to assign personnel familiar roles as possible and to simultaneously enhance flexibility of response to the circumstances of disaster. They call for appropriate specialized training to be developed and implemented to enhance existing courses.[10]

Several courses in humanitarian and disaster assistance are available to uniformed medical professionals. The Center of Excellence in DMHA, located in Hawaii, offers training exercises complete with scenario development, modeling, and processes to plan and prepare for emergency response, whether a natural, technologic, or complex humanitarian mission. The Center of Excellence generates policy options not previously considered and provides a laboratory for synthesis of diverse information. The center offers humanitarian assistance training via the Combined Humanitarian Assistance Response Training course. The Combined Humanitarian Assistance Response Training course is designed to provide basic information about complex emergencies in an international arena to U.S. military service men and women.[11]

The Air Force has introduced an International Health Specialist Program.[12] Individuals entering this program receive training on disaster relief and peacekeeping operations. The U.S. Public Health Service offers mandatory computer module training on disaster relief operations to their officers who are commissioned corps readiness force members. The University of Hawaii at Manoa offers a certificate program in DMHA. This program offers five courses and is taught by current experts in DMHA.[13] The University of South Florida offers an online graduate level course called Introduction to National (USA) and International Emergency/Disaster Management.[14] This program and others have a unique focus on the southern hemisphere. Participants learn what to expect from South American aid agencies, U.S. military response, and world response to disasters in Central and South America. After a review of available courses, none was found to address the specific needs of the APN.

Course Development

The Medical Humanitarian Assistance Course for APNs was developed to meet the needs of the FNP and Nurse Anesthetist practicing in the DMHA environment. A pilot course was conducted in the spring of 2000 as part of the graduate school of nursing curriculum at the Uniformed Services University of the Health Sciences located in Bethesda, Maryland.

During course development, a team of subject matter experts from the fields of international, governmental, and nongovernmental humanitarian assistance agencies was

assembled to provide consultation in course development. The pilot course consisted of a 2-day seminar designed to provide information and training APNs would need to practice successfully in a DMHA mission. At the conclusion of the course, attendees evaluated the course and provided feedback on objectives, instructors, and content. This end of course evaluation data were used in the design and development of the 2001 course including the development of a skills set for the FNP.

The 2001 course objectives were based on current review of DMHA literature, discussion with FNPs who have deployed in both military and civilian settings, and the pilot course. Subject matter experts from the Army, Air Force, Navy, U.S. Public Health Service, Great Britain, and the American Red Cross presented information as outlined on the course objectives (Tables 1 and 2). The 2001 course topics included instruction on the U.S. government response to DMHA, nongovernmental agency response, foreign government response, ethical considerations in the DMHA environment, and basic aspects of International Humanitarian Law in the DMHA environment. Teaching methods included multimedia presentations, lectures, and discussions based upon the identified skills set (Table 3 and Figs. 1 and 2).

Multinational response to humanitarian disaster
Definition of a disaster
Governmental and nongovernmental response to disasters
Ethical principles in humanitarian missions
Medical assessment in humanitarian missions
Legal issues
Providing care in austere conditions

Table 1. Medical Humanitarian Assistance Course Content

1. Identify and prioritize the most important problems during military medical humanitarian assistance missions.
2. Define and give examples of complex military medical humanitarian assistance missions.
3. Identify governmental and nongovernmental organizations involved during complex military medical humanitarian assistance missions.
4. List security issues that affect military medical humanitarian assistance missions.
5. Discuss ethical issues occurring while deployed in military medical humanitarian assistance missions.
6. Conduct a medical assessment of a complex military medical humanitarian assistance mission and demonstrate appropriate use of medical resources.
7. List basic points of international law, including the Geneva Convention, that relate to all persons involved in military medical humanitarian assistance missions.
8. Identify individual readiness needs before, during, and after deployment.

Table 2. Medical Humanitarian Assistance Course Objectives

The APN will be trained on the following skills prior to deployment:
Role of government agencies responding to the disaster
Role of nongovernmental agencies responding to the disaster
Role of the military in disasters
Role of foreign governments responding to the disaster
Role of foreign military in disasters
Assessment of medical and nonmedical supplies needed in the response
Assessment of host country medical and nonmedical assets available
National and international laws pertaining to the disaster
Military rules of engagement
Ethical issues in providing care in a DMHA mission
Command and control
Force protection

Table 3. Medical Humanitarian Assistance Course Skills Set

Discussion of 2001 Course

Participants received a course syllabus containing a welcome letter, course agenda, course objectives, skills set, relevant articles, and a handbook with instructor handouts. Two books were distributed *(The Field Operations Guide for Disaster Assessment and Response* and *The Metropolitan Medical Response System's Field Operation Guide)* that can be used as reference guides.

The course included breakout sessions on the second day to incorporate specific FNP and nurse anesthetist roles. For the FNP, this included an FNP who spoke about experiences while deployed on several DMHA missions and another FNP who addressed the top 10 diagnoses seen in DMHA missions.

At the conclusion of the course, attendees completed an evaluation. The evaluation method used Boone's evaluation model, which conceptually suggests that evaluation consists of making judgments about programs based on established criteria. Boone further stipulates the micro needs of the learner need to be converted to learning objectives to help evaluate and improve a course design.[15] Criteria for this evaluation includes the course

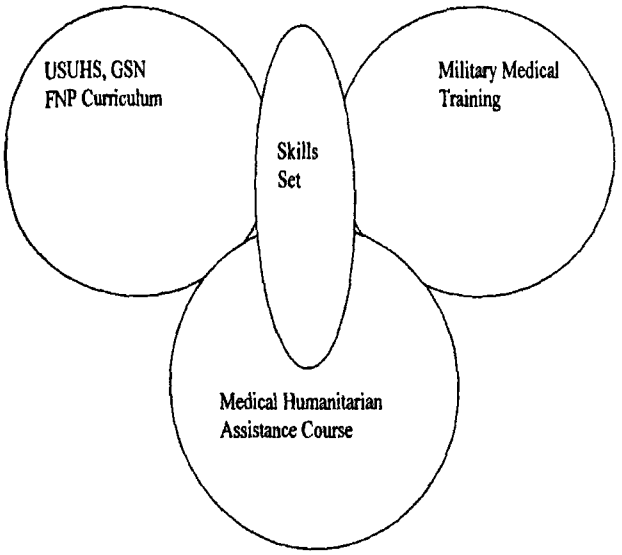

Fig 1. Schematic of humanitarian assistance course.

Fig 2. Logo for APNs.

content, course objectives, and instructors. Each class and instructor was evaluated on a Likert scale for applicability to DMHA and usability by the attendees. This course evaluation tool was adapted from the evaluation tool used by the Center of Health Education. Eighty-eight of all attendees stated that this course met their training needs if they responded to a DMHA mission.

Conclusions and Recommendations

The entire curriculum and especially courses such as the Medical Humanitarian Assistance Course for APNs gives students the skills necessary to be successful leaders and health care providers during a variety of practice settings from DMHA to homeland defense to worldwide deployment. Although limited, the data available on the role of the FNP during deployments suggests there is an important role for the FNP. Deployed military FNPs have performed well during humanitarian assistance and peacekeeping missions, but further documentation and research are needed. Students of this course, who deploy to DMHA environments, should be surveyed to validate this training. Future recommendations for this course are to make it available to all APNs as a continuing education module in the form of a CD-ROM, distance education, or web-based program. Ongoing funding and development of this course will enable the FNP to work as an integral member of the health care provider team in diverse and austere settings to include: providing primary care to deployed service members, civilians, and refugees; medical evacuation; providing rapid and frontline care in a hostile environment; and providing consultation to host nations. The uniformed services medical system including the chiefs of the medical corps, nurse corps, and the public health service can look to the Uniformed Services University to spearhead ongoing research on the FNP role and continue to prepare FNPs to be deployment ready. With this training, the uniformed services can confidently assign the FNP to a combat-ready platform. The FNP trained in DMHA is an excellent choice for any primary care or leadership position during a deployment.

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47th CSH: Leading the Way with Innovative Nursing in a Combat Zone

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In order to expedite the movement of a 296-bed Combat Support Hospital (CSH), the 47th CSH utilized pre-positioned stock. Approximately 93% of the medical equipment and supplies were waiting for the CSH in the CENTCOM theater of Operations. These items had been in storage on a ship and were retrieved for wartime use. The organic assets of the 47th CSH were used to fill the missing 7% of equipment and supplies. The 47th CSH received a 48-hour notice to load their equipment for movement overseas. The equipment was shipped from Fort Lewis, WA, to the Middle East approximately 3 weeks before the personnel deployment of the unit. Consequently, those items did not arrive in country until the CSH had been functioning as a 296-bed hospital for a month and the conflict was underway.

There are inherent problems in providing logistics to a 296-bed CSH. As typical with any field medical unit, many clinicians find the field equipment is not what they are accustomed to in a fixed hospital facility. Some equipment and supplies are not available based upon the mission of a CSH (pediatric or obstetric equipment). Other items are not immediately available because they must be shipped from the unit's home station. Another logistical problem is that supply systems are not fully operational in an immature theater, and it may take weeks or months for the first restock orders to arrive. In the meantime, personnel must utilize their available resources and ingenuity to provide patient care with the equipment and supplies that are on hand.

Providing quality care in an austere environment can be challenging, but the philosophy of the 47th CSH is "adapt and overcome." That is exactly what the innovative nursing staff did to ensure the standard of care was not compromised due to logistical constraints. When an ICU was faced with the challenge of severe hypothermia in a patient following surgery, they created their own model of a field-warming device with supplies readily accessible to them. The 47th CSH's field warming device created by CPT Kevin McDermott, an intensive care nurse, is used to warm patients with a core temperature <95°F. The Field Bear Hugger was constructed from 10 – one liter water bottles and duct tape assembled together by cutting off the tops and bottoms of the water bottles, then taping all 10 cylinders to form one long tube. Next, one end of the tube is placed inside an environmental control unit (ECU) plenum and the opposite end under the blankets of the patient. The ECU temperature is increased to the warm setting and the patient's temperature is monitored very closely until it reaches >96°F. Patient safety was paramount in the design and utilization of the field expedient warming device.

Throughout the height of the initial conflict, the 47th CSH nursing personnel responded to multiple scud alarms. Many of the patients hospitalized during that time required oxygen support. Specialist Ellis, a 91WM6, came to the rescue of one such patient who was has having distress and desaturating after donning his M40 Protective mask during a scud alarm. This ingenious licensed practical nurse threaded oxygen tubing through the drinking straw of the protective mask, and then turned a small (D-cylinder) oxygen tank flow to 5 liters. Within seconds, the patient's oxygen saturation was >95% and he was breathing comfortably. This type of quick-thinking intervention just highlights the creativity and compassion of the 47th CSH nursing staff.

Responding to an unexpected pediatric patient care mission, the nursing staff eagerly met the challenge with resourcefulness and enthusiasm. A crib was easily made from ½ of a green medical chest with burn chux for padding. Various configurations for a baby bottle were attempted, however, the optimal configuration consisted of an 8-ounce water bottle with an 18 gauge needle in the bottom as a carburetor, and the finger of a nonlatex glove cut and taped securely to the opening of the water bottle. Diapers consisted of stockinet, abdominal pads, and silk tape. These field diapers may not have been the equivalent of commercially produced diapers, but they served their purpose, keeping the toddler and staff dry. In addition to diapers, stockinet can be constructed to make multiple items such as underwear for school age children, tank top tee shirts, and beanie hats. Ensuring not to neglect the growth and development, a colorful mobile was built from cardboard and rope decorated with foam stickers.

In providing quality care to patients, nurses use a holistic approach, treating not just the patient, but the family entity also. This was the scenario when two critical care nurses, CPT Watry and SSG Jansen, 91WM6, solved the dilemma of a breast feeding mother separated from her infant due to the hospitalization of one of her older children. The innovative creation for a field electric breast pump consisted of a mid-stream urine collector with rigid funnel, suction tubing, and the

the standard field suction device. A hole was punctured in the bottom of the specimen cup, then one end of the suction tubing was threaded through and taped securely, the other end was connected to the field suction device and set to low intermittent suction. The breast milk collected in the container of the suction device. Unfortunately, the breast milk had to be discarded because of inadequate long-term storage. However, the mother was extremely grateful because she was able to maintain her breast milk supply.

The innovation and energy of the nursing staff of the 47th CSH is boundless. Patient safety always dictated the construction and utilization of the creations (inventions). Everyday, as new situations arise, these highly motivated and resourceful officers and enlisted Soldiers tackle whatever challenges are presented to them.

Committed to excellence in patient care, the nursing personnel of the 47th CSH, under the proactive guidance and direction of LTC Ruth Lee, not only meet the standard, but exceed the standard.

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Designing and Implementing a National Database Depicting Quality of Nursing Care and Staffing Effectiveness

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How good is the quality of nursing care in military treatment facilities (MTFs)? How many and what type of nurses are needed to provide high quality nursing care? To answer these questions, military nurse researchers, with the support of the TriService Nursing Research Program and a team of national experts, are conducting the largest and most comprehensive examination of military inpatient nursing care quality indicators and nurse staffing effectiveness ever conducted in the United States. Called the Military Nursing Outcomes Database (MilNOD) Project, it assesses the extent to which the structure of nurse staffing and the nursing work environment, as well as patient factors, impact nursing sensitive outcomes in acute, adult military inpatient units.

The MilNOD Project, initiated in 2002, currently includes collection of data for 13 nursing sensitive quality indicators as well as two explanatory variables and one contextual feature (see Table 1). Data are collected at 14 Army, Navy, and Air Force inpatient treatment facilities (see Table 2) located in the United States. In the future, the project team believes all MTFs would benefit greatly from participating in the MilNOD.

MilNOD Structural Indicators:
- Nursing care hours
- Nursing skill mix
- Nursing staff education, experience & certification

MilNOD Nursing Outcome Indicators:
- Job satisfaction
- Needlestick injuries

MilNOD Explanatory Variables:
- Patient acuity
- Patient turnover

MilNOD Contextual Feature:
- Nursing work environment attributes

MilNOD Patient Outcome Indicators:
- Pressure ulcer prevalence
- Restraint use prevalence
- Falls
- Satisfaction with:
- Care in general
- Nursing care
- Pain management
- Education
- Nurse medication administration errors

Table 1. MilNOD Nurse Sensitive Nursing Care Quality Indicators and Measures

Army Medical Treatment Facilities
Bassett Army Community Hospital, Fort Wainwright, AK
Brooke Army Medical Center, San Antonio, TX
DeWitt Army Community Hospital, Fort Belvoir, VA
Madigan Army Medical Center, Fort Lewis, WA
Walter Reed Army Medical Center, Washington D.C
Womack Army Medical Center, Fort Bragg, NC

Air Force Medical Treatment Facilities
Group Joint Venture Hospital, Elmendorf Air Force Base, AK
10th Medical Group Hospital, U.S. Air Force Academy, CO
Malcolm Grow Medical Center, Andrews Air Force Base, MD
Wilford Hall Medical Center, Lackland Air Force Base, TX

Navy
Naval Hospital Bremerton, WA
Naval Hospital. Oak Harbor, WA
Naval Medical Center San Diego, CA
National Naval Medical Center, Bethesda, MD

Table 2. Sites participating in MilNOD

Data from the MilNOD are analyzed and depicted in a nursing performance database. A performance database is a compendium of timely information and evidence available to organization decision-makers. It makes visible key structure, process, and outcome measures that are needed to manage and improve performance. The MilNOD nursing performance reports comprise a database that, in combination with the skills and knowledge to use it, helps to improve MTF effectiveness and meets the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) requirements for monitoring quality indicators. The MilNOD information can then be used to help organizations progress towards or maintain the highest levels of nursing care quality, staffing effectiveness, and patient safety (see Figure 1).

The Structure of Care Impacts Nursing Care Quality

The MilNOD Project differs from previous assessments of military health care quality because it uses scientifically valid and reliable nurse staffing data collected at the site of care during each shift. Head nurses record the number

Medical Units Military Treatment Facility #12 Average Daily Census > 100		Actual Performance		2nd Qtr MilNOD Performance Comparison (Indicator Value)*		2nd Qtr National Performance Comparison (Indicator Value)*	
MilNOD Indicator		1st Qtr	2nd Qtr				
Operations	Total nursing care hours per patient day	10.76	13.14	11.06	(1.19)	8.93	(1.47)
	RN nursing care hours per patient day	5.47	6.22	5.24	(1.19)	5.91	(1.05)
	Number of patients per RN	4.56	4.53	5.11	(1.13)	4.31	(0.95)
	Staff Mix Percentages						
	RNs	51%	47%	47%	(1.00)	67%	(0.70)
	LPNs	33%	36%	28%	(1.29)	7%	(5.14)
	NAs/TeleTechs/Sitters	16%	17%	25%	(0.68)	26%	(0.65)

*Indicator values are a ratio calculated from the medical units' actual performance & the performance comparison. A value greater than 1.0 is desirable. Cell colors emphasize "stoplight" performance indicated as green, yellow, or red.

Fig 1. Abbreviated Example of a MilNOD Database for Medical Units at One Large Medical Treatment Facility.

of direct patient care hours worked by inpatient nursing personnel. The MilNOD data experts continually monitor data integrity. Nurse skill mix is examined according to a variety of nursing personnel categories such as registered nurses, licensed practical nurses, corpsmen, medics, nursing assistants, sitters, and telemetry technicians. The number of hours worked by various types of nurses such as reservists, agency, active duty, and Department of Defense (DoD) civilians are also collected. This allows the MilNOD Project to evaluate the impact of deployment with or without reserve backfill on patient and staff outcomes. It also provides the ability to determine optimal staff mixes for critical care, step down, medical, and surgical inpatient units.

	Staff Category Percentages						
	Active Duty	25%	30%	50%	NA	None	
	GS	54%	58%	40%			
	Reservist	6%	7%	2%			
	Percent agency nursing care hours	5%	8%	21%	(2.63)	8%	(1.00)
	Mean WMSN Patient Acuity	3.19	3.17	3.29	(0.96)	None	
Quality Monitoring	Falls per 100 patient days	0.57	0.50	0.30	(0.60)	0.36	(0.72)
	Falls with injury per 100 patient days	0.25	0.25	0.07	(0.28)	0.01	(0.04)
	Nursing medication administration errors per 100 patient days	0.91	0.66	0.34	(0.52)	None	
	Pressure ulcer prevalence (all stages)	33%		None		15%	(0.45)

Fig. 1 (Continued)

	Hospital-acquired pressure ulcer prevalence (all stages)	24%		None		9%	(0.37)
	Restraint use prevalence	0%		None		4%	(35.70)
	Nursing needlestick & sharps injuries per 100 patient days	0.05	0.00	0.00	(0)	None	
Satisfaction	Overall satisfaction with hospital care	6.19		6.12	(1.01)	None	
	Overall satisfaction with nursing care	6.15		6.18	(1.00)		
	Satisfaction with technical quality of nursing care	6.10		6.07	(1.00)		
	Satisfied with planning for needs after discharge	5.50		5.68	(0.97)		
	Satisfied with nurse's ability to relieve pain	6.17		6.17	(1.00)		

Fig. 1 (Continued)

Education, experience, and professional certification data provide an additional dimension used in the interpretation of nurse staffing information. Nursing personnel's level of education, years of nursing experience, and specialty certifications are compiled by the MilNOD Project at no cost to the participating MTF. This information is collected on a yearly basis from individual nurses using a standardized, scannable survey.

Nursing Care Quality is Affected by the Nursing Work Environment

Changes in composition of the military beneficiary population, increases in combat casualties, as well as health care personnel deployments, have led to significant transformations in the military health care workplace. In addition, work environments may be altered, as many MTFs implement on-going programs to optimize patient-safe hospital climates. The MilNOD measures key aspects of the work environment for nurses that likely have an impact on patient outcomes and safety. Features of the work environment that nurses find desirable and attributable to high standards of professional practice (resource adequacy, administrative support, nurse-physician collaboration, nurse autonomy, and control over nursing practice) are measured using a valid and reliable instrument called the Nursing Work Index-Revised (NWI-R).[1] The MilNOD collects this information once each year using a scannable survey. Administration and analyses of the nursing work environment survey are conducted at no charge to the MTF. The MilNOD project uses these data to monitor the impact of positive and negative changes in nursing working conditions on patient safety and outcomes.

Patient Factors Must Be Considered When Evaluating Nursing Care Quality

It is essential to account for patient acuity when examining patient safety and staffing effectiveness. It is difficult to interpret the true meaning and significance of nursing care quality outcome indicator data without adjusting for patient acuity. Therefore, the MilNOD uses measures of the severity of patient illness and associated nursing care requirements, as measured by the Workload Management System for Nurses, to account for nursing unit patient acuity.[2]

The unit patient census is a static number and does not reflect the considerable workload generated when patients are admitted or transferred to, and/or discharged or transferred from, a nursing unit.[3] The MilNOD uses an index of admissions, discharges and transfers, termed Patient Turnover, as a pragmatic and easily understood way to reflect the stress and strain on nursing staff that is not always reflected in the patient census. Patient Turnover is collected at each site of care for each shift and entered by the unit head nurse into the project database.

Nursing Outcomes Are an Important Indicator of Nursing Staff Retention

Nurses are the heart of health care. Studies have shown that satisfaction with nursing care plays a primary role in how patients view their hospital stay. The more satisfied patients are with nurses, the more satisfied they are with their stay.[4] The reverse is also true. Unhappy nurses have ample opportunity to pass their concerns along to patients if they choose. If nurses are satisfied, there should be positive repercussions in health care quality passed on to patients. Therefore, nursing job satisfaction is a vital measure when evaluating staffing effectiveness. The MilNOD measures nursing job satisfaction annually with a single-item measure of global job satisfaction known to have high parallel-test reliability with the 31-item Nursing Job Satisfaction Survey.[5]

Although mandated by the Occupational Safety and Health Administration, less than 15% of U.S. hospitals use safe needle devices and systems.[6] Most MTFs have room for improvement in attaining a needle-free environment. Health care workers suffer more than 600,000 injuries from conventional needles and sharps annually.6 Registered nurses working at the bedside sustain an overwhelming majority of these exposures. These exposures can lead to Hepatitis B, Hepatitis C, and Human Immunodeficiency Virus (HIV).

Over 80% of needlestick injuries are preventable.[6] The MilNOD has included needlestick injuries as an important nursing outcome indicator because high needlestick injury rates may be a reflection of the nursing work environment and nursing care quality. Each facility uses needlestick occurrence forms as sources of data for this indicator. De-identified data are collected monthly by a trained nurse at each MTF and transmitted to the MilNOD database.

The Ultimate Pursuit is to Improve Patient Outcomes

Patients are admitted to the hospital because they need care that can not be given at home — most of that care is delivered by nurses. Nurses have constant presence and proximity to patients where a significant number of preventable errors occur.[7] It is not surprising that nurses are viewed as the safety net for the health care system. When the quality of hospital care deteriorates, nurses are at the bedside to catch problems and intervene before mistakes happen. When nursing care

quality worsens, patients may suffer. To equate the impact of nursing care on patient outcomes, the MilNOD collects data for eight nursing sensitive outcome indicators.

Pressure ulcer prevalence, defined as the proportion of all patients examined during a 1-day prevalence survey with stage I, II, III, IV and unstageable ulcers, is one of two indicators for which data are collected by a team of on-site experts twice each year. Pressure ulcer prevalence data are supplemented with information about hospital acquired pressure ulcers and pressure ulcer risk evaluation rates. The MilNOD provides each site with on-site standardized training in assessing and documenting pressure ulcers. Each identified pressure ulcer is staged by two trained nurses. Interrater reliability of pressure ulcer staging is assessed during each survey. Following the prevalence study, MTF nurses collate their unit level data, enter MilNOD indices onto a scannable form, and forward the form to the MilNOD survey center for processing. These data are collected at the unit level without patient identifiers.

Restraint use prevalence data are collected along with the pressure ulcer data on the day of the prevalence study. Restraint use prevalence is defined as the proportion of observed patients having one or more restraints in place. In addition to restraint prevalence rates, the MilNOD collects information about restraint types as well as compliance with documentation of restraint use.

Patient falls, defined as a patient's unplanned descent to the hospital floor, are extracted from MTF occurrence reports.8 These data are collected monthly by an on-site trained nurse, reported by the unit and time of day of the occurrence, and expressed as the rate per 100 patient bed days. All inpatient falls to the floor are described by the level of injury or no injury, circumstance (observed, assisted, restrained at the time of fall), type of fall (accidental, unanticipated physiologic, anticipated physiologic fall or unknown), and presence or absence of implementation of a falls prevention protocol.

Nurse medication administration errors are collected using occurrence reports in the same manner as described for patient falls. Nurse medication administration error is defined as "a deviation from the physician's medication order as written on the patient's chart."[9] This deviation must be traceable to an error carried out by a nurse and is expressed as a rate per 100 patient bed days. Data regarding the type of error (wrong patient, medication, dose, time, route or omission) along with levels of harm (none, mild, moderate, major and death) are collected retrospectively by a trained on-site nurse each month without record of identifiers.

The MilNOD uses four indicators of patient satisfaction with nursing care:

- Patient satisfaction with pain management;
- Patient satisfaction with patient education;
- Patient satisfaction with planning for needs after discharge; and
- Patient satisfaction with overall care.

The Patient Satisfaction with Nursing Care Questionnaire, a 16-item instrument known to be valid and reliable, is used by the MilNOD to collect patient satisfaction indicator data.[10] The MilNOD survey team mails satisfaction surveys annually to patients discharged from participating MTFs.

Technical Aspects of the MilNOD

The MilNOD uses a Microsoft (MS) Access database that exists on computers in participating nursing care units. Head nurses ensure data from each shift are keyboarded into their unit's specialized database and then the data are saved and exported to the secure MilNOD server. This data transfer is accomplished via a file transfer program (FTP). Database programming and upkeep are performed at one central site. The MilNOD provides dimensional level security, maintaining multiple levels of information protection, and is compliant with all DoD security requirements.

The power of databases like MilNOD comes from information generated for effective decision-making. This is accomplished via quarterly reports distributed to nursing leaders at participating sites. The MilNOD report writer extracts data from the database and graphically depicts quarterly data for each MTF and unit. The MTF and unit data are depicted by unit type (medical, surgical, stepdown, and critical care) and MTF size with small MTFs having an average daily census less than 100 and large MTFs having an average daily census of 100 or more. Graphs also include comparison data from the California Nursing Outcomes Coalition (CalNOC), a comparable database that includes more than 150 hospitals from the state of California.

The current state of the MilNOD represents findings from three previous nursing research projects, all funded by the TriService Nursing Research Program. Army nurses have spent the last 8 years establishing and testing a standardized process for collecting nursing structural data as well as nurse and patient outcomes data.

What now is viewed as Stage One of the MilNOD research program was a pilot study that aimed to demonstrate that 1) nursing care quality data could be obtained, 2) American

Nurses Association (ANA) Nursing Quality Indicators data could be collected at a military facility, and 3) ANA Nursing Quality Indicator values were correlated with measures of nursing care quality. This was a feasibility pilot study using existing data. The sample included 872 adult inpatient records from 2 ICUs, 1 stepdown unit, 1 medical unit, and 1 surgical unit. Data were collected at Madigan Army Medical Center (MAMC) over a 3-month period in the summer of 1998. A total of 5,082 patient records were reviewed to measure nursing care quality and collect indicator data. The sample also included 73 RNs, LPNs, and unlicensed staff from the study units. The study demonstrated that data for all ANA Nursing Quality Indicators were able to be collected in the military facility. In addition, study data suggested there may be a positive association between nursing staff satisfaction scores and the quality of nursing assessments. A positive association between the patient satisfaction with nursing care indicator and daily nursing skill care quality was also noted. The ratio of RNs to LPNs and unlicensed staff caring for patients was positively correlated ($p < .05$) with the quality of nursing assessment and patient education. Finally, total nursing care hours provided per patient day was positively correlated at a significant level with the quality of nursing assessments, patient education, and central line care.[11-13]

During the second stage of MilNOD development, a 9-month demonstration project was undertaken in collaboration with experts from CalNOC. This project examined the feasibility and usefulness of collecting nurse staffing and patient and nurse outcome indicator data using the methodologies developed over the past 6 years by CalNOC. Dubbed the Army Nursing Outcomes Database (ANOD) project, the study demonstrated that CalNOC indicator definitions could be standardized and that data collection and analysis procedures could be adapted and standardized for use at two large Army MTFs (Walter Reed Army Hospital [WRAMC] and MAMC).[14] This study examined data collected over a variety of time periods from February to September 01, from 24 clinical nursing units. Staffing data from 5 critical care units, 3 stepdown, and 11 medical-surgical units representing 7,861 inpatient days were analyzed. The findings of this project demonstrated to Army nursing leaders that use of a standardized nurse staffing and patient outcome measurement methodology could enable the Chief of the Army Nurse Corps, military treatment facility Chief Nurses, and other nursing leaders to compare nursing care quality to internal and external benchmarks on a unit by unit, section by section, or MTF by MTF basis.

Stage Three of the MilNOD research program was called Establishing a MilNOD.[15] The aims of this stage were to expand and sustain a high quality military database and increase the scope and impact of the ANOD, transforming it into the MilNOD. This study recruited seven Army, Navy, and Air Force inpatient hospital sites and was successful in sustaining data collection and validating the completeness, accuracy, and reliability of data collected for each indicator. Furthermore, two additional indicators—nurse medication administrations errors, and nursing staff needlestick injuries, and two additional explanatory variables—patient turnover and patient acuity, were pilot tested and implemented. While accomplishing this essential research and development work, the study also provided direct benefits to participating MTFs and nurse leaders. These benefits included unit and MTF-level quarterly reports regarding nurse staffing effectiveness and patient safety, thus satisfying Joint Commission on Accreditation of Healthcare Organization (JCAHO) requirements.

Sites participating in the MilNOD must obtain local and Uniformed Services University of the Health Sciences Institution Review Board approvals before data is collected. Data contained in the MilNOD are de-identified prior to being sent to the study server. The MilNOD contains no personal health information.

MilNOD Value and Why It Works

Rather than focus only on productivity (work output) and cost, the idea of the MilNOD series of projects was to ensure that military nursing leaders have information available so they can add outcomes to the nursing care evaluation equation. Before this could be accomplished, several obstacles had to be overcome. Foremost, there were limited standardized nurse staffing and nurse-sensitive patient outcome reporting mechanisms in use in DOD MTFs. In addition, comparing nursing staff adequacy and outcomes among DoD MTFs was very difficult.

• **Clinical/Service**	• **Human Resources**
– Injuries to patients	– Nursing Care Hours Per Patient Day
– Patient falls	– Agency use
– Skin breakdown	– Staff injuries
– Medication errors	– Staff satisfaction

Table 3. Mutual MilNOD & JCAHO Indicators [16]

The approach underpinning the MilNOD is also at the heart of the JCAHO initiative: to establish and implement standards for tracking the effectiveness of nurse staffing in acute care settings.[16] Hence, participating in the MilNOD aids MTFs in JCAHO compliance as it provides a data collection and analytic framework for examining staffing effectiveness. Table 3 depicts MilNOD indicators that satisfy JCAHO staffing effectiveness standards.

The National Quality Forum (NQF) has endorsed 15 nursing sensitive standards for measuring "the extent to which nurses in acute care hospitals contribute to patient safety, healthcare quality, and a professional work environment" (NQF, pg v).[17] The NQF proposes their standards be used by hospitals to identify quality improvement opportunities in order to maximize performance as well as outcomes. It is anticipated that JCAHO will incorporate all 15 NQF standards in future surveys. The MilNOD currently collects seven of the 15 NQF measures and has the potential to easily add and provide data regarding four additional NQF standards (see Table 4). This match between MilNOD and NQF measures validates the MilNOD strategies for using data to portray critical outcomes and processes of care and use these to identify opportunities for improvement that are directly influenced by nursing personnel.

CATEGORY	MEASURE
Patient-centered outcome measures	2. Pressure ulcer prevalence 3. Falls prevalence 4. Falls with injury 5. Restraint prevalence (vest and limb only)
System-centered measures	12. Skill Mix (RN, LPN, unlicensed assistive personnel [UAP], and contract) 13. Nursing care hours per patient day (RN, LPN, and UAP) 14. Practice Environment Scale—Nursing Work Index

Table 4. Mutual Measures for the MilNOD and the National Voluntary Consensus Standards for Nursing-Sensitive Care [17]

There are several key factors that have made the MilNOD successful to date. Most importantly, the researchers and the MTFs work together as a team. The participating MilNOD MTFs are considered customers and partners rather than data acquisition sites. Each MTF designates a MilNOD site coordinator. This individual is all important to reinforcing the MilNOD's positive impact at each MTF. They are responsible for the on-site project and data collection oversight. Site coordinators work with MilNOD investigators and consultants to promote communication, collaboration, and ensure commitment.

Commitment has been another key to the success of the MilNOD. The principal investigators, military nursing leaders, as well as the nationally distinguished consultants have been with the project for many years. The project would not have been accomplished without grant funding from the TriService Nursing Research Program (TSNRP). To date, TSNRP has invested over $2.1 million into MilNOD related studies. The MilNOD has been successful in standardizing practices and processes across systems, sharing best practices among MTFs, and providing excellent training opportunities for novice nurse researchers and data-driven head nurses. It is a win-win situation for nurse leaders and researchers.

Conclusions and Opportunities for the Future

The need to have structure, process, and outcome indicators that are sensitive to military nursing care quality is vital. This will help military nurses ensure that nursing productivity is not the sole outcome measure. For example, nurse-to-patient ratios should not be based solely on numbers of nurses, rather, how many nurses and *what types* are needed to render *safe* and *effective* care. By choosing identically defined indicators, standardizing data collection processes (including frequency of data collection and level of analysis) and ensuring high quality data, military nurses can guide their destiny based on quantifiable, defensible data.

Findings from the MilNOD Projects will be used both strategically and operationally to effect policies pertaining to the quality of military health care, in general, and the quality of military nursing care, in particular. Future goals for the MilNOD project include a practical, accessible, and reliable database with the capacity to serve all Army, Navy, and Air Force MTFs. When Hospital Commanders demand that nursing leaders defend the costs for the largest personnel pool in the inpatient facility, what evidence will be used to support a response? The MilNOD can provide the solid basis for that evidence.

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The Design and Development of a Case Management System for RC Personnel

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Introduction

In June 2003, the Army Medical Command mobilized approximately 31 Army Nurse Corps officers to assist with the care coordination of Reserve Component (RC) Soldiers mobilized for the Global War on Terrorism (GWOT), including Operation Iraqi Freedom (OIF). These nurses were to focus on two groups of RC Soldiers entering the Army medical system. First, were Soldiers who were retained at the mobilization stations for preexisting medical conditions. The second group of RC Soldiers, those who had been deployed, sustained an illness or injury in the theater of operations, or had been injured during CONUS mobilization and had recovered enough to be treated on an outpatient basis.

Soldiers not fit for deployment remained at the mobilization station until they were sufficiently healed to deploy, or until they went through the medical evaluation (MEB/physical evaluation PEB process). By October 2003, more than 4285 of those Soldiers had been held over at the mobilization stations throughout the country.1 Supporting additional Soldiers at the mobilization sites became a major resource consideration. Problems with access to timely care and medical appointments prompted the Army to employ Nurse Corps case managers (CM) to assist with the coordination of services. The Army also published an update to the Personnel Policy Guidance in October 2003, "RC Soldiers identified in the first 25 days as having a preexisting medical condition that renders the individual non-deployable may be released from active duty (REFRAD) immediately. The RC Soldiers on active duty for 30 days or more identified as having a preexisting medical condition that renders them not meeting medical retention standards are required to undergo Medical Evaluation Board/Physical Evaluation Board (MEB/PEB) processing prior to REFRAD. In certain circumstances, RC Soldiers can be placed in medical hold, receive treatment, returned to duty, or processed through the Physical Disability Evaluation System (PDES)."

The second group of RC Soldiers identified for case management was those who had deployed to Iraq or Afghanistan and, consequently, sustained an illness or injury, or were injured or became ill while mobilized for CONUS operations. These Soldiers were medically evacuated from the theater to the Army Military Treatment Facility (MTF) closest to the Soldier's mobilization station with the appropriate clinical resources. In many circumstances, the MTF at the mobilization site had the clinical capabilities to meet the Soldier's healthcare need. They were required to stay at this site because it was their official duty station and where their TRICARE provider was located. Upon clinical completion, Soldiers were released from active duty (REFRAD) or, if they did not meet Army retention standards, they were referred to the Physical Disability Evaluation System. While the Soldiers received medical care, they were often at a great distance from their homes, imposing a major hardship on their families. A few innovative programs, such as the remote care program at Madigan Army Hospital, developed strategies to help recovering Soldiers receive the care they needed as close to their homes as possible. Other MTFs lacked the resources to provide a similar service. In any case, these deployed and injured Soldiers were integrated with the first group of non-deployable Soldiers who had not been REFRAD and the entire group was known as Medical Holdover (MHO) Soldiers.

To assist in developing a system to manage RC Soldiers in a medical holdover (MHO) status, the U.S. Army Medical Command (MEDCOM) deployed a senior nursing officer and 31 Army Nurse Corps officers to lead and provide case management to these Soldiers. The most senior Army Nurse Corps officer remained at the MEDCOM to establish and coordinate the system of case management while the other Army Nurse Corps officers were dispersed in small groups to MTFs around the country that were dealing with a rapidly increasing MHO population. Initially, these nurses were employed differently by each MTF. Some were used to fulfill their original purpose as CMs while others were used to supplement existing staff within the MTF. There was much confusion as to the CM mission and goals. To combat this confusion and lack of awareness regarding the CM role, a

coherent and expedient system of case management was developed. This article will outline that process.

Need to Understand the Organization

The first step undertaken by senior management was to clarify the mission and goals for the case management system that would be applicable across all Regional Medical Commands (RMCs) and all MTFs. The mission was to provide case management services to RC personnel who were in an MHO status. To accomplish this mission, six initial objectives were delineated. The primary goal was to establish automated information, or a case management information system, that would identify and monitor the population to be case managed. The MHOs were monitored by different organizations at the MTFs. Some were managed by the garrison; others were assigned to a medical company, creating a variety of Soldier accountability. Obtaining data regarding numbers of MHOs was necessary to plan case management services. The second goal established was to specify standards and metrics to monitor outcomes for the MHO population. This was also necessary to demonstrate the impact of case management on these outcomes. The third goal was to develop a model for case management services and establish standards for a uniform process of case management. The fourth goal or objective was to assign senior case managers (SCM) to each of the RMCs to provide leadership, management, and consultation as well as quality oversight for MHOs, and to provide mentoring to CMs assigned to the respective MTFs within that region. The fifth goal was to educate CMs as to their function, and ultimately, to establish competency standards for their performance. The sixth and final goal of the senior administrator, SCMs, and MHO CMs, was to obtain "buy in" by other providers such as medicine, patient administration, hospital command, as well as command and control elements.

GOAL 1: Establishing an Automated or Case Management Information System (CMIS)

To establish CMIS, several considerations must be incorporated into the planning. According to Powell,2 Mullahy, and Jensen,3 a system must be developed to:

1. Standardize terminology, documentation, and data management systems
2. Simplify data updates by tracking details required by the organization
3. Contain decision support systems that can turn data into actionable information
4. Provide outcome information
5. Provide the ability to run data in parallel with other systems, either real time or in batch mode
6. Act as a central repository for required patient information
7. Provide comprehensive patient data throughout the continuum of care
8. Provide patient census data
9. Store relevant clinical and administrative data for long-term population trends
10. Eliminate double data entry by same or multiple users

A CMIS was developed for the MHO population that met criteria above. No existing database could provide information about this population. Hence, the birth of the MHO module contained within the Medical Occupational Data System (MODS) created by modifying the Active Duty Medical Extension (ADME) module that was set up to monitor RC Soldiers who were placed on active duty because of Line of Duty (LOD) issues. This module is password protected and gives visibility on MHO Soldiers for those with a need to know. This module contains essential information about the Soldier and his progression through the MHO system. It generates information about individual Soldiers, but also provides population-based reports as well. The MODS has gone through several revisions that have increased its power to capture pertinent data about the MHO population. Case managers are responsible for ensuring the timely input of data. The MHO module is user friendly and all CMs are trained in its use. Access is restricted primarily to CMs. The evolution of MODS as a management tool has kept pace with the policy and procedure changes occurring in the management of MHOs. No existing database has surpassed the MHO module in MODS providing essential metrics and outcomes data to Commanders on a variety of issues.

GOAL 2: Establishing Standard Outcomes and Metrics

The MODS database was developed to capture data and metrics related to the following standards established by the Office of The Surgeon General (OTSG) to provide guidance for essential case management services. Many of these standards were incorporated into the MODS database and are monitored on a routine basis. These standards then became the outcomes for MHO care and provided the metrics for the system of case management. The data in MODS captured the compliance of case management to meet those standards. However, there was great data variability until CMs became comfortable and confident in the system. The standards delineated by OTSG surpassed TRICARE's Access Standards.[4] These standards are:

1. Consultations are set up within 72 hours.
2. Diagnostic testing is to be completed within 1 week.
3. Surgery must take place within 2 weeks from scheduling to procedure time.
4. There will be one CM to 50 Soldiers.
5. Case managers will meet in person weekly or more frequently, as needed, with Soldiers
6. Each Soldier is assigned a primary care manger (physician)
7. MEBs should be processed within 30 days
8. 70 percent of MHO Soldiers will be dispositioned within 100 days of entry to MHO.

These metrics were rolled up in a report through each RMC and posted on the OTSG webpage. The OTSG report continued on a weekly basis until January 2005 when it was determined that MODS data was providing sufficiently accurate data and that the OTSG report was no longer necessary.

GOAL 3: Establishing a Model for Case Management Services

Case management was designed around the Standards for Case Management as delineated by the Case Management Society of America (CMSA).[5] Case management is a collaborative process using assessment, planning, implementation, coordination, outcomes monitors, and evaluation to meet the healthcare needs of a defined population. Team process utilizing appropriate and effective health care resources is the keystone of case management. The case management used for the MHO population is an integrated model where the primary care manager (PCM), the CM, and other members of the multidisciplinary team work in collaboration to identify services required by the Soldier. The CM coordinates and follows up on all referrals and consultations, and monitors whether or not Soldiers keep appointments. Occasionally, Soldiers do not keep appointments and this prolongs treatment and wastes valuable time and resources unnecessarily. An integrated model of case management uses the multidisciplinary team to drive the development of all care management. Communication and documentation are shared and transparent between providers. Care is coordinated across different setting and departments. A continuous effort is made by the CM, PCM, and other providers to streamline processes and resources. Case managers were encouraged to work with administration, such as garrison, to reduce duplication in administrative and clinical effort. Strategies for this CM model also include an emphasis on evidenced based decision-making, proactive care, decrease in waste, and cooperation among medical and administrative staff. Although protocols, algorithms, and evidenced based guidelines are emphasized, customization of care based on individual Soldier's needs and values are also a primary consideration. The CM also assumes a pivotal role in monitoring the MEB/PEB process.

Patient/family education and patient safety are a system priority in the integrative model of case management. Case management for the MHO population has grown and evolved over time. Processes and procedures are continuously revised and reevaluated. For instance, changes in the CM to Soldier ratio have been made and many policies and procedures have been developed, piloted, and revised to meet changing needs and challenges. The case management model is fluid and highly flexible. A draft of the latest policies and changes related to MHO case management are in Attachment A, Medical Holdover Case Management Program (at end of article).

GOAL 4: Establishing Senior Case Manager (SCM) Leadership, Mentoring, and Quality oversight at the RMCs

In order to coordinate case management services for RC personnel, SCMs in the rank of Colonel or Lieutenant Colonel with extensive experience and advanced knowledge in case management were mobilized and assigned one to each of the four CONUS RMCs. These SCMs were assigned to the Deputy Chief of Clinical Services at each RMC and provided support, consultation, and educational offerings for the CM force at each of the MTFs. They were also tasked with providing consultation and quality oversight to CMs at the Community Based Health Care Organization (CBHCO), which included staff development and troubleshooting issues between MHO and CBHCO CMs. The CBHCOs have been described as installations without real estate and MTFs without clinics.[6] The mission of the CBHCO is to allow U.S. Army Reserve and Army National Guard Soldiers to live and perform Title X work near their home community. CBHCOs were initially set up in AR, CA, FL, MA, and WI. Each provided care for up to 300 Soldiers within each respective state. The CBHCOs currently have multistate "footprints." Three additional CBHCOs opened earlier this year in AL, UT, and VA. All CBHCOs can surge to 500 Soldiers. The CBHCOs do not fall under MEDCOM; they belong to Forces Command (FOSCOM). MEDCOM provides technical support and quality oversight via the SCMs. In some RMCs, such as the Southeast, the SCM also has an active role providing quality oversight to CMs at the mobilization sites. While the SCMs have been on board, more than 21,000 Soldiers have been processed through the MHOs/CBHCOs.

Approximately 10,000 of those were successfully returned to the Army fit for duty.8 Approximately 5000 Soldiers underwent MEBs. Today, there are approximately 5,600 Soldiers in the MHO with approximately 1,700 of those in the CBHCO. The SCMs spearheaded the transitioning of Soldiers from MHOs to the CBHCOs in their RMCs and have monitored and encouraged the timely processing of Soldiers through the MEB/PEB process. Along with the MEDCOM Case Management office, SCMs coordinated a clinical quality management program that has become standardized across the four RMCs and have proved to be a most effective strategy implemented by MEDCOM, not only for reducing and managing the MHO population, but also projecting the need for additional CMs and resources. The SCMs were also actively involved in the orientation and ongoing staff development of the CBHCO CMs.

GOAL 5: Educating the MHO CMs

The Army Nurse Corps officers that were initially mobilized had a wide variation in CM skill sets. An orientation was provided to the original cadre of CMs. The major areas of instruction included orientation to MODS, management of populations, productivity, organizational structure, and use of resources and decision-making. This was delivered in four phases. Phase one included read-ahead materials. Phase two included a 2-hour video teleconference (VTC) which included an orientation to algorithms for CMs, forms, lines of communication, as well as follow-up clarification of read-ahead materials. Phase three included a clinical experience with an experienced, inpatient CM. Phase four included a follow on VTC that focused on additional MODS training. This orientation was followed by monthly VTCs which were implemented to review metrics, update materials, and "just in time" training dictated by CM needs in the field. This was an efficient and effective manner in the early days of case management for the MHO population.

This past year, the SCMs provided an orientation to the new MHO CMs. These were all done on site with 2 weeks of follow-up clinical experience with a CM at their respective MTF. The VTCs are now provided on a quarterly basis and are usually submitted for continuing education credit. Within each RMC, the SCM may be doing weekly or biweekly VTCs for staff development, policy updates, and SCM consultations with CMs from the MTFs on issues of importance. To standardize training on case management across the RMCs, a competency checklist was developed by Colonel Rebecca Baker, a SCM with the North Atlantic Regional Medical Command (NARMC). This was piloted in the southeast region and was well received by the CMs. It is now used throughout the RMCs to orient new CMs and evaluate the existing CM function. This can be viewed in Attachment 2, Case Management Competencies (at end of article).

GOAL 6: Achieving "Buy In" or Implementing an Organization Innovation

Another major goal of the MEDCOM, SCMs, and MHO CMs has been convincing administrators and Commanders of the value added properties of case management. Awareness of who CMs are and what they do is paramount. Soldiers and their families also must be convinced of the CM's value to their care and treatment. The role of the CM has been stressful, confusing, and very frustrating at times. On the other hand, it has been very gratifying and fulfilling to see the difference CMs make in all those individual lives, Soldier by Soldier. Their satisfaction and support for case management is well documented across all RMCs. When we review the numbers of Soldiers that have gone through the MHO/CBHCO system, it is readily apparent that case management has made a profound difference in productivity, efficiency, and quality. These facts provide the evidence that Commanders now see as the value added dimension CMs provide in conserving resources, reducing costs, and maintaining high standards of care. It has become readily apparent to most SCMs and CMs that Commanders, Patient Administrative Division (PAD), administrative staff, and other providers know that the success of the CM is contingent on their support for Case Management. Working collaboratively has been the key for the successful CM that has evolved for the MHO/CBHCO populations.

Case Management Evolution and Conclusions

The system of case management used for the MHO and CBHCO populations was highly inventive and successful. This success did not happen by chance, but took place through efforts of many whose primary goal was to help our war fighters in the RC.

The Case Management process continues its dynamic evolution. Job descriptions, Standard Operating Procedures, and SMART books have all been generated and revised on an ongoing basis. Education and orientation processes have become more concise and organized. Best practices are being identified, shared, and then implemented. At times, in the past 2 years, procedures would change dramatically in a very short time span. Everyone involved in Case Management has learned that change is probably the only constant and that flexibility and a "can do" attitude has and continues to

make the initial approaches to Case Management evolve and mature into a most effective system truly balances quality and efficiency.

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ATTACHMENT A

OTSG/MEDCOM Regulation
WORKING DRAFT

27 December 2004

Medical Holdover Case Management Program

1. Purpose. To establish guidelines, standards, policies, and procedures for MEDCOM Medical Holdover (MHO) Case Management Program.

2. References.

   a. Operation Order 04-01 Data Call and MHO Reporting

   b. FORSCOM implementation plan for CBHCI, Annex H (CBHCI MHO selection criteria)

   c. Annex B (Definitions) to FORSCOM Implementation Plan for CBHCI

   d. AR 635-40 Physical Evaluation for Retention, Retirement, or Separation

   e. AR 40-66 Medical Record Administration and Health Care Documentation

   f. AR 40-501 Standards of Medical Fitness, Chapter 3, 7.

   g. DODI 1332.38 Physical Disability Evaluation

   h. Personnel Policy Guidance of Operations Iraqi Freedom (OIF), Enduring Freedom (OEF) and Noble Eagle (ONE) (Updated 6 Dec 2004)

   i. FORSCOM Implementation Plan for Community Based Health Care Initiative (CBHCI), 1 April 04

   j. Implementing Instructions for Transition of RC Soldiers From Partial Mobilization Orders to Medical Retention Processing

   k. OTSG/MEDCOM Policy Memo 04-007, Soldiers Considered Appropriate for Medical Retention Processing

3. Definitions.

   a. **Case Management** is a collaborative process using assessment, planning, implementation, coordination, outcome monitors, and evaluation to meet the healthcare needs of a defined population. Team process utilizing appropriate and effective health care resources is the keystone of case management.

   b. **Case Manager (CM)** is normally a Registered Nurse (RN) who is assigned as the primary CM for each Medical Hold Soldier. The OIC for MHO Case Management must be a RN. Other licensed health care professionals, such as PA or Clinical Social Workers may be assigned as CMs in geographical locations where qualified RNs are unavailable. The CM implements the Case Management Process with a focus on clinical evaluation and outcomes.

   c. **Community Based Health Care Initiative (CBHCI)** in the Army's overall initiative to allow, when appropriate, MHO Soldiers to receive treatment and recuperate at or near their homes using locally available health care options in the TRICARE Network.

   d. **MHO Soldier** is a mobilized reservist who:

      1) Comes to the mobilization station with a pre-existing condition that causes him to be non-deployable, and that condition is not discovered until after day 24 of mobilization. (If such a condition is discovered prior to Day 25, the Soldier should be immediately REFRAD.)

2) Incurs / aggravates an injury or develops / aggravates an illness prior to deployment, and requires treatment before he can deploy.

3) Incurs / aggravates an injury or develops / aggravates an illness while deployed, returns as a MEDEVAC, and requires further treatment as an outpatient.

4) Incurs / aggravates an injury or develops / aggravates an illness while deployed, returns with his unit for demobilization, and requires medical treatment for the injury / illness.

5) All mobilized RC Soldiers who fit the criteria above should be considered MHOs, and should receive case management. Soldiers who will not be ready to return to duty within 60 days or who have less than 120 days left on their mobilization orders have the choice to remain on active duty to get their medical care. Those who elect not to remain on active duty should be counseled on potential consequences and loss of benefits, and be REFRAD.

e. **MHO Team** is a multidisciplinary group of medical and command elements consisting of the Primary Care Manager, CM, Social Work Care Manager, PEBLO counselor, Soldier's Command and Control (C2): Company Commander and Company 1SG, Deputy Commander for Clinical Services (DCCS) and other members as appropriate.

f. **Medical Operational Data System (MODS)** ADME/MHO Module is the single source data base to track and report the status of MHO Soldiers. Individual CMs are responsible for entering Soldiers in this database and maintaining valid and reliable data. Data quality is ensured by the Case Management OIC and Regional Medical Command SCM.

g. **Primary Care Manager (PCM)** is a physician, PA, or nurse practitioner (NP) who is principally responsible for the Soldiers' medical care. Whenever possible, the PCM for MHO Soldiers should be a physician.

h. **Optimal Medical Benefit** is the point at which time the medical treatment results in the Soldier's return to duty or the Soldier's provider can make a reasonable determination that the Soldier is unlikely to ever meet retention standards per AR 40-501.

i. **Social Work Care Manager (SWCM)** is a Licensed Social Worker who implements the Case Management Process with a focus on psycho-social evaluation and outcomes.

4. Responsibilities.

a. MEDCOM will report the status and disposition of all MHO Soldiers to TSG on a weekly basis via MODS and Case Manager reports.

b. Regional Medical Commands will ensure the MTFs within the region have the clinical resources and processes to effectively and efficiently care for MHO Soldiers.

c. MTF Commander

1) Maintain a 1:50 case manager: MHO Soldier ratio. MTF's performing CBHCO-like operations will maintain a ratio of 1:30.

2) Ensure each MHO Soldier has an assigned PCM, and that the PCM follows the Soldier from time of entry into MHO until final disposition (REFRAD, separation, or retirement).

3) Monitor the MHO Soldiers' healthcare process to ensure timely, appropriate, and quality care.

4) Ensure timely and appropriate referral to and through the Physical Evaluation Disability System.

d. CM

1) Act as primary point of contact for MHO Soldier regarding all clinical care.

2) Coordinate and communicate Soldier's clinical care when transferred between MHOs, MRPUs, or CBHCOs.

3) Ensure timely and valid MODS data entry.

4) Ensure Soldier's profile is current and valid.

5) If applicable, ensure LOD is initiated.

6) Coordinate and schedule all medical care and appointments for Soldiers.

7) Assessment. Conduct a thorough and systematic assessment of Soldier's status within 24 hours (or next business day) of Soldier being identified for MHO status or transfer from another MHO, MRPU, or CBHCO.

8) Problem Identification. Coordinate with health care team to identify Soldier's clinical concerns/problems, including mental health concerns.

9) Plan of Care.
   a) Collaborate initially and at least weekly with Soldier, Soldier's Command and Control element, PCM, and other members of the MHO Team to identify immediate, short term, and ongoing needs to develop, evaluate and update plan of care.
   b) Educate Soldier regarding clinical aspect of MHO program, diagnosis, plan of care, and assist the Soldier to make informed decisions regarding plan of care.
   c) Coordinate and communicate Soldier's appointments and referrals to Soldier and members of the MHO Team.
   d) Coordinate with Soldier's Command and Control to ensure Soldier compliance with scheduled appointments.

10) Monitor.
   a) Conduct ongoing assessment and document to monitor quality of care, achievement of outcomes, and whether health care goals are realistic or achievable.
   b) Follow up with the Soldier at least weekly or after each of their appointments, as appropriate and document interaction.
   c) Maintain ongoing and regular communication with providers to coordinate adjustments or revisions to plan of care.

11) Evaluate.
   a. Engage the Soldier and the MHO Team to methodically and continuously evaluate the Soldier's response to healthcare and the case management process at least weekly.
   b. Assist to evaluate when the Soldier meets optimal medical benefit.

12) Assist Deputy Commander of Clinical Services (DCCS) and Physical Evaluation Board Liaison Officers (PEBLO) to coordinate and facilitate timely, thorough, and appropriate referrals to the Medical Evaluation Board (MEB) and Physical Evaluation Board (PEB).

e. OIC, MHO Case Management

1) Assigned by the Commander or DCCS, usually in coordination with Regional Medical Command SCM; to provide

supervision and oversight to MHO Case Management personnel/staff.

2) Ensure that CMs are oriented and proficient in MHO process, CM process, scope of practice, and responsibilities.

3) Monitor CM quality of care and Soldier satisfaction.

4) Implement process improvements to achieve desired outcomes.

5) Meet weekly with DCCS or designee to review MHO Soldier status.

6) Coordinate with RMC SCM to implement MHO program policy and guidelines.

f. Regional Medical Command SCM

1) Ensure MHO guidelines and policy is communicated and implemented throughout region.

2) Act as liaison and resource for regional MHO issues/concerns.

3) Ensure adequate resources and staffing for regional MHO Case Management.

4) Assist OTSG/MEDCOM and MTFs with development, implementation, and evaluation of MHO Case Management Program, Case Management Orientation, and ongoing training.

5) Evaluate and ensure MODS data reliability and validity.

6) Act as resource and liaison for CBHCI program and CBHCOs within region.

7) Assist to evaluate MHO program effectiveness and initiate process improvements at regional level.

5. Policy.

a. The overarching intent of the MHO program is "If we broke it, we offer to fix it." That is, if a mobilized RC Soldier has a medical problem that requires ongoing treatment and follow-up, and falls outside the parameters of the 25 Day Rule, he probably qualifies for MHO.

b. MHO CMs will serve as the Soldier advocate during the MHO process. The CM will assist to ensure a compassionate and caring environment for MHO Soldiers; monitor Soldier satisfaction, formulate actions and implement processes as necessary to optimize quality outcomes.

c. All mobilized RC Soldiers who fit the criteria for MHO Soldier (3d) above should be considered MHOs, and should receive case management. Soldiers who will not be ready to return to duty within 60 days or who have less than 120 days left on their mobilization orders have the choice to remain on active duty to get their medical care. Those who elect not to remain on active duty should be counseled on potential consequences and loss of benefits, and be REFRAD.

d. The CMs will effectively and efficiently manage all mobilized RC Soldiers (Army National Guard and US Army Reserve) assigned to the MHO Company or Medical Retention Procession Unit (MRPU) through the healthcare and administrative process from time of attachment through final disposition.

e. Medical Operations Data System (MODS) is the single source for reporting Soldiers in MHO status. Case Managers are responsible for data validity and reliability. The MODS data will be updated at least weekly NLT

Monday at 1600.

f. Case Managers will be placed under the supervision of the DCCS.

g. The MHO Team will meet at least weekly to communicate, collaborate, and coordinate the Soldiers' plan of care.

h. All case management encounters will be documented on a SF 600 and be maintained as a permanent part of the Outpatient Treatment Record.

i. Clinical access standards for MHO Soldiers receiving care at MTFs are as follows:

1) New consults-within 72 hours.
2) Diagnostic testing-within one week
3) Surgery-two weeks from scheduling to procedure
4) MEB's complete in 30 days, from the date of NARSUM to the date the packet is mailed to the PEB.

6. Procedure.

a. Assist MTF and Garrison Commanders to ensure that all Soldiers eligible for MHO program are appropriately identified and assigned to either the MHO Company or Medical Retention Processing Unit per MRP Guidance during all phases of deployment.

b. Provide a formal overview of the clinical/medical aspect of the MHO Program to each MHO Soldier. (MHO or MRPU Company Orientation will cover other aspects of MHO Program to include Soldier accountability, Lines of Duty, Medical Retention Processing Orders, etc.) MHO Program specifics should be documented in a brochure or booklet, reviewed by the Soldier's CM and made available to the Soldier. MHO Program orientation will include the following:

1) Role of CM and Primary Care Manager
2) MHO Team Process
3) Appointment Process
4) Soldier Rights and Responsibilities regarding Medical Care
5) CBHCO Program
6) MEB/PEB Process
7) Optimal Medical Benefit
8) **TRICARE** Benefit
9) VA Healthcare Benefit
10) Military One Source

c. Complete CM intake within 24 hours or next business day following in-processing, accurately reflecting the Soldier's bio/psycho/social status and include at least the following:

1) Demographics: Name, Rank, DOB, SSN, Rank, Army Compo, MOS, Civilian Job, Family Members, Date MOB, Orders Expire, Deployed, Wounded, Operation
2) Social History: Previous employment, health insurance including family coverage, impact of mobilization on family and civilian job, years in military including active duty time, Soldier's expectation of care
3) MHO Information: Date attached, Address, Phone, Duty Address and Phone, Cell, Orders and Type, Expiration Date, Profile (T/P and expiration date), Initial Reason for MHO
4) Clinical Assessment: profiles, LODS, all conditions treated in theater, systems review, functional status, mental status, pain level, Soldier's personal assessment of their condition(s)/symptom(s).

d. Assess Soldier's eligibility for transfer into a CBHCO program within the first few days of entry into MHO. If Soldier is eligible for transfer follow CBHCO policy and procedure for transfer process.

e. Document Soldier status following provider visits and at least weekly. Documentation should be problem focused, reflect Soldier's response to care, reflect coordination with providers, Soldier's C2, patient education, current assessment of Soldier's problem(s), any new concerns, functional level, pain assessment, and update plan of care.

f. Assist to coordinate care of Soldiers who continue to need ongoing healthcare after release from active duty (REFRAD) or separate from service. Coordinate with VA and TRICARE as appropriate.

g. Assess Soldier's satisfaction with MHO program through ongoing queries, participation in Town Hall Meetings, and distribution/evaluation of the Satisfaction Survey posted on the AKO web site: www.us.army.mil under My Medical, MHO Case Management Portal.

7. Orientation and Training

a. OTSG/MEDCOM is responsible for developing and initiating Case Management orientation.

b. Initial orientation.

1) Review of read-ahead Materials. Read-ahead materials are posted on the AKO web site: www.us.army.mil under My Medical, MHO Case Management Portal.

2) Didactic Phase. Eight to ten hours of classroom or VTC training, divided into 9 modules of instruction (Attachment 1).

3) MODS Training. MODS training overview via WEBEX (computer-generated or VTC) and award of MEDCOM training certificate.

4) Facility Orientation. Hands-on training on the MODS MHO-ADME module, CHCS, coordinating appointments and consults, TRICARE Network referrals, site specific MHO policy and procedures, facility orientation, etc.

5) Clinical Orientation. Four weeks of clinical orientation with assigned preceptor, CM OIC, and RMC Senior Case Manager to learn, develop, and achieve case management competencies (Attachment 2).

c. Ongoing Training.

1) Quarterly Training Video Tele-Conferences (VTC). Conducted by the MEDCOM Case Management Support Office. Subjects include continuing education for Case Managers, providing up-dates and tutorials for MODS, Soldier tracking, new policies and procedures, TRICARE up-dates, and any additional information and training specific to their needs.

2) RMC Training. Conducted by RMC Senior Case Manager at least once per month to address implementation of program changes and specific case management issues.

Attachment 1

MEDICAL HOLDOVER CASE MANAGER ORIENTATION

Didactic Module	Trainer	Time
MHO Program Overview • Mission • Goals • Coordination-Communication-Responsibilities of M2, C2, Garrison	RMC Senior CM CM OIC	1 hr
Case Management • Program • Responsibilities of staff including Senior Case Manager • Documentation of Care • Resources	RMC Senior CM CM OIC	1 hr
Medical Retention Process • Qualification • Orders	HRC	1 hr
Medical Care for Mobilized Soldiers • General • Role of Primary Care Provider • EPTS Conditions • Service connected illness/injuries • Point of referral to MEB/PEB	OTSG-ASG/DCS Force Projection RMC Senior CM DCCS	1 hr
CBHCO • Organization • Eligibility • Transferring a Soldier	RMC Senior CM	1 hr
MODS • Program Overview • CM Responsibilities	MODS Program Analyst	1 hr
Medical Fitness Standards • Deployability • Profiles • AR 40-501	DCCS	1 hr
MEB/PEB • Process • Role of PEBLO	PAD Officer PEBLO	1 hr
Customer Service • Overview • Dealing with difficult situations	Customer Service Representative	1 hr
Clinical Module	**Trainer**	**Time**
Case Management Competencies • Case Management Scope of Practice • Case Management Standards	Case Management Preceptor CM OIC RMC Senior CM	4 weeks
Evaluation of Orientation and Feedback	All	30 min

Attachment 2

CASE MANAGEMENT COMPETENCIES

Case Manager needs to meet competencies with n 4 week afe r comp etion of MTF Orientation.

1-Never done 2-Meets standard with assistance 3-Meets standard independently

1 2 3	**Standard**/Criteria	Date Verified	Signature of Verifier
Assessment	**Conducts a thorough and systematic evaluation of Soldier's current status**		
	1. CM intake is thorough and complete, accurately reflecting the solder's status.		
	2. Intake is completed within 24 hours after admission into MHO.		
	3. Current status includes valid profile.		
	Assess resources used in managing Soldier's condition; diagnosis, past and present treatment course and services; prognosis, goals, treatment, and provider options.		
	1. Assessment is reflected in CM intake and plan of care.		
	2. Assessment is pertinent to Soldiers' present conditions.		
Problem Identification	**Utilize objective data gathered through assessment, examine the potential for effective intervention, and identify problems requiring case management intervention.**		
	1. Include Soldier in problem identification.		
	2. Identifies problems that result from		
	• Lack of an established treatment plan with specific goals		
	• Over or under-utilization of services		
	• Premature or delayed discharge from appropriate level of care		
	• Use of inappropriate services		
	• Ineffective treatment plan		
	• Permanent or temporary alterations in functioning		
	• Medical/psychological/functional limitations		
	• Lack of education of disease course/process		
	• Lack of resolution in meeting health needs		
	• Lack of family or social support		
Planning	**Collaborate with Soldier and members of the healthcare team; identify immediate, short term, and ongoing needs to develop the plan of care.**		
	1. Care Plan reflects relevant data gathered from assessment, Soldier input, and past medical records.		
	2. Care Plan includes at least weekly coordination with Soldier's Company Commander/1SG and PEBLO, as appropriate.		
	3. Care Plan is realistic and addresses clinical problems		
	4. Soldier is well informed about care plan strategies		
	5. CM assists Soldier to make informed decisions about plan of care		
	6. Plan of care is initiated with 24 hours of Soldier's attachment to MHO.		
	7. Referrals/appointments to support the plan of care		

			are requested within 24 hours.		
			8. Plan of care is reviewed and updated as necessary following each health care encounter.		
			9. CM can verbalize understanding of Soldier's diagnosis, prognosis, care needs, and outcome goals.		
			10. Care plan reflects best appropriate use of resources.		
			11. CM can proactively identify situations that are, or may be barriers to goal attainment.		
			12. CM actively works toward resolution of conflicts and problem solving.		
			13. Healthcare team is involved in the ongoing plan of care.		
			14. Care plan considers Soldier's adherence to therapies, treatments, and medications.		
Monitoring			**The case manager conducts ongoing assessment and documentation to monitor quality of care, achievement of outcomes, and whether goals are realistic or achievable.**		
			1. CM will follow up with the Soldier after each health care encounter (exception PT/OT) and document interaction.		
			2. Soldier's care will be monitored by the healthcare team through CM collaboration and communication; and reflected in the weekly CM case presentation.		
			3. Maintain regular communication with providers, C2, and PEBLO to advise adjustments or revisions to the care plan.		
			4. Monitor Soldier's progress against established OTSG and regulatory timelines.		
			5. Update patient status in MODS on an ongoing basis.		
Evaluating			**The case manager methodically and continuously evaluates the Soldier's response to healthcare and the case management process. The evaluation engages the Soldier and healthcare team.**		
			1. Identify if the Soldier's condition has reached a static or regressive situation and proactively facilitate adjustments to plan of care to promote enhanced outcomes.		
			2. Identify when the Soldier reaches optimal therapeutic benefit or will not meet retention standards with 12 months of ongoing care.		

West Nile Virus Surveillance at U.S. Military Installations during 2003 and 2004

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The Department of Defense conducts surveillance for West Nile virus (WNV) at military installations throughout the United States. During 2003 and 2004, the United States Army Center for Health Promotion and Preventive Medicine-South (USACHPPM-South) located at Fort McPherson, GA, tested 82,667 mosquitoes that were submitted by preventive medicine personnel at military installations throughout the southeastern United States to determine whether mosquitoes from these locations were infected with WNV. Seven mosquito pools (< 25 mosquitoes per pool) from five military installations were positive for WNV. Military installations that submitted WNV positive mosquito pools were located in FL in 2003, and GA, ND, and TX during 2004. Mosquito species that tested positive for WNV at the USACHPPM-South laboratory were Culex quinquefasciatus, Cx. restuans, and Cx. tarsalis.

INTRODUCTION

The WNV is a mosquito-borne *Flavivirus* (Family Flaviviridae) that causes West Nile fever and West Nile encephalitis/meningitis in infected humans as well as various fatal syndromes in some mammals, many birds, and at least one species of reptile.[1, 2] The WNV is a member of the Japanese encephalitis antigenic complex, which includes St. Louis encephalitis virus.[3, 4] Similar to St. Louis encephalitis (SLE) virus, WNV in the United States is maintained in an enzootic transmission cycle between wild birds and mosquitoes principally in the genus *Culex*, with virus transmission to humans by bridge vector mosquitoes during periods when wildlife infections are prevalent.[5-7] However, WNV has greater epidemic potential than SLE virus due to an extremely high viremia produced in common bird species.[6]

The WNV was first identified in the United States during 1999 in New York City and then spread rapidly across the country, reaching CA in 2003 (Figure 1).[8, 9] Following the detection of WNV in NY in 1999, the United States Army Center for Health Promotion and Preventive Medicine-North (USACHPPM-North) played an essential role in providing laboratory support for a comprehensive regional WNV surveillance effort to determine which mosquito species might serve as vectors of WNV and to monitor the geographic spread of the virus.[10] By the end of 2004, WNV had been detected in all of the United States except AL and HI (Figures 2-4). The WNV is now the leading cause of human arboviral encephalitis in the United States.[11] To date, WNV has been detected in 60 mosquito species in North America, many of which are in mosquito genera other than *Culex*.[12] Turell et al, reviewed studies on the vector competence of North American mosquitoes for the transmission of WNV.[13] The role that many of these mosquito species play in WNV transmission to humans or other large animal hosts is unknown.

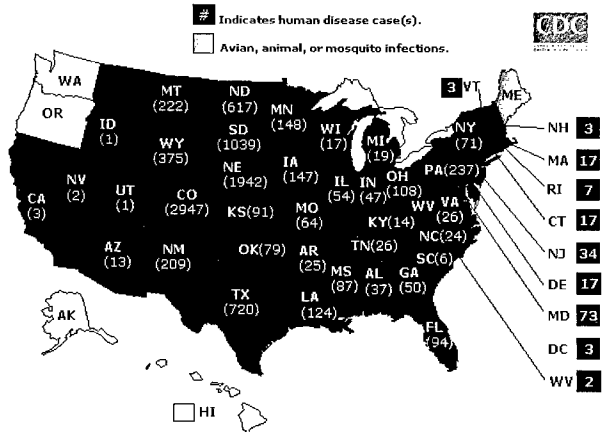


Fig 1. Human cases of West Nile virus for 2003. Data compiled by the Centers for Disease Control and Prevention. Available at URL: http://www.cdc.gov/ncidod/dvbid/westnile/surv&control03Maps.htm.

In compliance with the Department of Defense (DoD) health affairs policy, the Services have conducted a multidisciplinary WNV surveillance and response effort with laboratory support to identify WNV infected mosquitoes provided by USACHPPM. Participating military installations conducted mosquito surveillance to monitor mosquito populations and to detect the presence of WNV infected mosquitoes. Laboratory support to test mosquitoes for infection with WNV was provided by each of the regional USACHPPM subcommands (North, South, and West). The USACHPPM-South Entomological Sciences Division

laboratory supports southeastern Army, Navy, and Air Force installations. Surveillance and WNV testing results were utilized by installation preventive medicine personnel to assess the threat of WNV to Soldiers and their families and to guide appropriate measures for the control of mosquitoes.

The purpose of this report is to provide a record of WNV testing results for mosquitoes submitted by participating military installations to USACHPPM-South at Fort McPherson, GA, and to discuss the implications of this surveillance program in the context of epidemic WNV transmission.

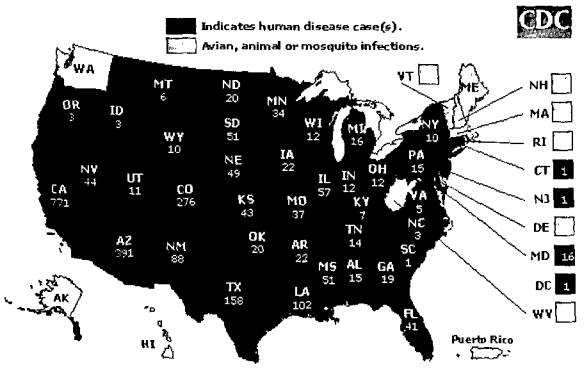


Fig 2. Human cases of West Nile virus in 2004. Data compiled by the Centers for Disease Control and Prevention. Available at URL: http://www.cdc.gov/ncidod/dvbid/westnile/surv&control04Maps.htm.

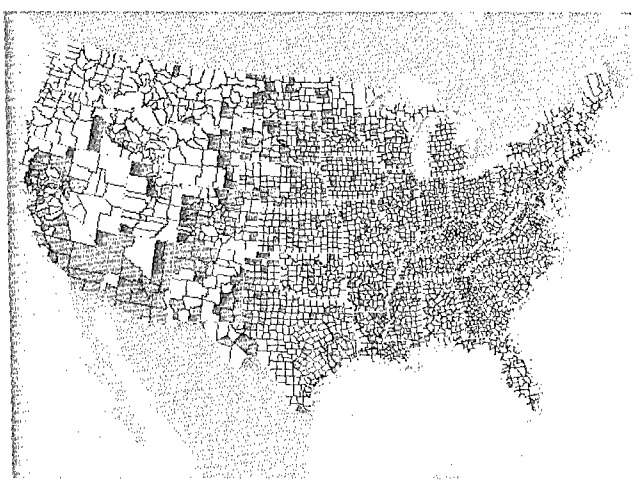


Fig 3. U.S. counties reporting human cases of West Nile fever or West Nile encephalitis during 2004. Data compiled by the United States Geological Survey (USGS) and available at: http://westnilemaps.usgs.gov/us_human.html.

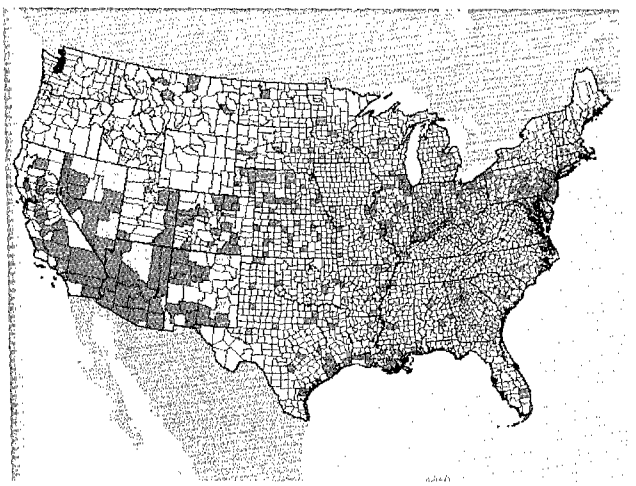


Fig 4. U.S. counties reporting mosquitoes with WNV during 2004. Data compiled by the USGS and available at: http://westnilemaps.usgs.gov/us_mosquito.html.

MATERIALS AND METHODS

Mosquito Surveillance: Preventive medicine personnel located at each participating southeastern U.S. military installation collected adult female mosquitoes using various methods, including direct aspiration of mosquitoes from resting sites, common mosquito traps (CDC-type mechanical suction traps baited with either a small incandescent light and/or carbon dioxide CO2), NJ light traps (consisting of a mechanical suction trap baited with an incandescent light), a commercially designed propane-generated CO2 trap, and gravid traps (consisting of an updraft mechanical suction trap suspended above an aqueous infusion of hay or other plant material attractive to egg-laying female mosquitoes) (Figures 5-7).[14] Mosquito collection methods utilized at each military installation were determined by preventive medicine personnel at that installation based upon local needs and resources. Some installations relied exclusively on one method of mosquito collection, while others utilized several collection methods simultaneously. All trapping methods were selective for particular mosquito species due to the varied response that each species will exhibit to a given attractant (human body, light, CO2, hay infusion). Due to limited knowledge regarding which mosquito species may serve as epidemic or bridge vectors of WNV in the United States, the concurrent use of several mosquito collection methods at each installation was encouraged to provide the broadest possible representation of the mosquito species composition.

Collected mosquitoes were identified to species by installation preventive medicine personnel and then pooled (< 25 mosquitoes per pool) by collection date, trap location, and

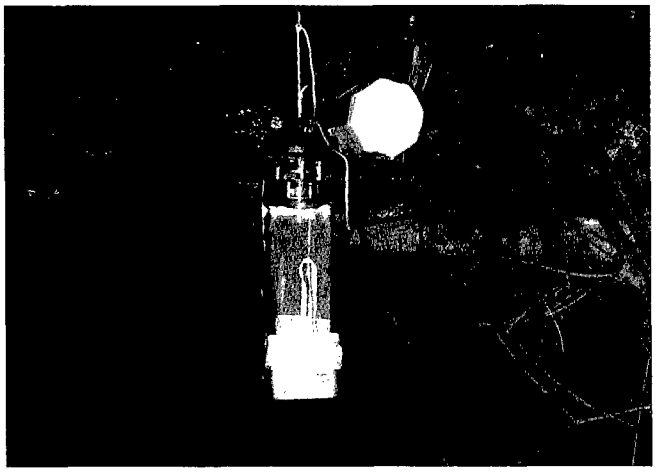


Fig 5. CDC-type mechanical suction trap baited with carbon dioxide (CO2) for collection of adult host-seeking female mosquitoes.

Fig 6. New Jersey light trap baited with carbon dioxide (CO2) for collection of adult mosquitoes.

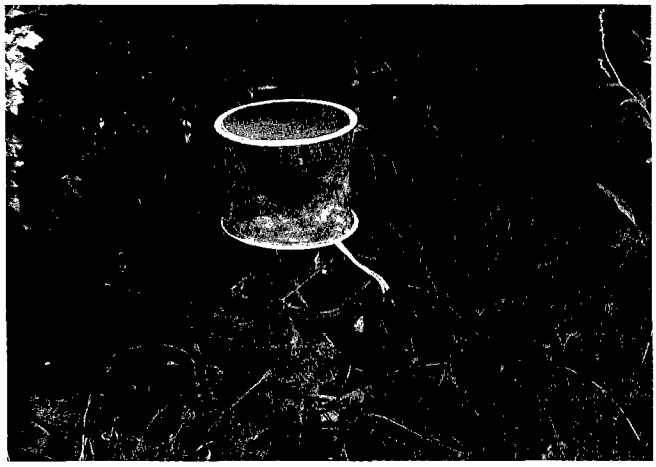


Fig 7. Gravid trap baited with an aqueous infusion of plant material for collection of egg-laying female mosquitoes.

species identification. Mosquito pools were given specific identification numbers and then shipped overnight, with frozen gel packs, to USACHPPM-South for confirmation of specimen identification and WNV testing. Mosquito pools received at USACHPPM-South were examined to confirm mosquito species identification with further confirmation of species identification, when necessary, by the Biosystematics Unit of the Walter Reed Army Institute of Research. Mosquitoes in the *Culex pipiens Linnaeus* group were identified as *Cx. quinquefasciatus* Say or *Cx. pipiens* based upon their geographic origin from a southern or northern region, respectively. Following confirmation of species identification, mosquito pools were transferred to a round-bottom 1.5 ml microcentrifuge tube and held in a standard laboratory freezer until tested for the presence of WNV. Air Force installations submitted mosquito collections to the Air Force Institute for Environment, Safety, and Occupational Health Risk Analysis at Brooks Air Force Base, for identification and initial WNV testing, using a WNV VecTest Kit, prior to submission to USACHPPM-South for confirmatory WNV testing.

Avian Surveillance: The DoD community on each military installation was encouraged to report dead wild birds to installation pest management or veterinary personnel for recovery and submission to the U.S. Geologic Survey (USGS) National Wildlife Health Center for detection of WNV by Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) per CDC guidance.[7] Testing results were returned by the USGS laboratory back to USACHPPM-South for dissemination to installation preventive medicine personnel.

In addition to the passive dead bird surveillance program described above, surveillance for WNV using sentinel chickens was also conducted at Fort Polk, LA. Sentinel chickens were selected, housed, and monitored per CDC guidance.[7]

WNV Testing: Individual mosquito pools were ground and spun to pellet mosquito body parts; 40 µl of homogenate from five separate mosquito pools were combined to form one super-pool prior to RNA extraction using a commercially available kit.

Separate mosquito pools with remaining homogenate were then held in a refrigerator for confirmatory testing in the event that WNV was detected in a super-pool.

Following RNA extraction, real-time RT-PCR was performed on mosquito super pools following protocols for RT-PCR detection of WNV in mosquito pools developed by the U.S. Army Medical Research Institute of Infectious

Diseases, Frederick, MD.[15] The RT-PCR was performed using the QuantiTect Probe RT-PCR kit for WNV and results read on a Roche LightCycler v.2.0 that graphically displays relative fluorescence dependent upon the starting amount of WNV RNA in the super-pools being tested (the more WNV RNA in the mosquito super-pool, the greater the fluorescence of the sample).

If any super-pool sample was found to contain WNV RNA, RNA extraction and real-time RT-PCR were performed to provide confirmation of the positive result and to determine which submitted mosquito pool contained the WNV infected mosquito.

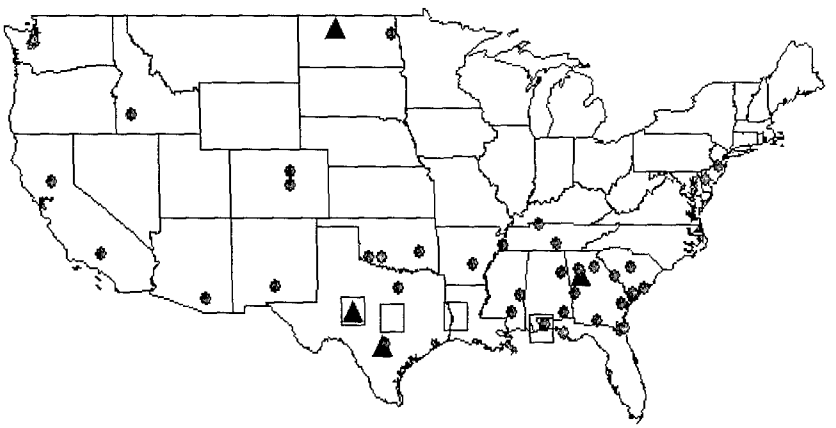
RESULTS AND DISCUSSION

Mosquito Surveillance: Overall, USACHPPM-South received and tested 82,667 mosquitoes of 39 species or species groups from Army, Navy, and Air Force installations predominantly located in the southeastern United States (Figure 8). WNV was detected in two of 4,913 mosquito pools submitted in 2003 and five of 5,421 mosquito pools in 2004 (Tables 1 and 2). WNV positive mosquito pools for 2003 consisted of 1 pool of *Cx. quinquefasciatus* and 1 pool of *Cx. restuans* Theobald, both collected at Pensacola Naval Air Station, FL, on 17 Jul. WNV positive mosquito pools for 2004 consisted of 2 pools of *Cx. tarsalis Coquillett* collected at Minot Air Force Base, ND, on 9 Aug, 1 pool of *Cx. quinquefasciatus* collected at Fort Gillem, GA, on 3 Sep, 1 pool of *Cx. quinquefasciatus* collected at Goodfellow Air Force Base, TX, on 16 Sep, and 1 pool of *Cx. quinquefasciatus* collected at Fort Sam Houston, TX, on 26 Oct.

Previous mosquito surveillance studies to identify WNV conducted on United States military installations by the DoD from 1999-2002, resulted in 90% of positive pools comprised of *Culex* mosquito species (specifically *Cx. quinquefasciatus, Cx. tarsalis, Cx. nigripalpus* Theobald, and *Cx. restuans*), with the remaining positive pools identified as *Aedes* or *Anopheles*.[10] While there were no WNV positive *Cx. salinarius Coquillett* or *Cx. nigripalpus* collected as part of this surveillance program, these species were collected in large numbers as part of this surveillance effort during both 2003 and 2004, and have been previously shown to harbor WNV.[16,17]

It is unclear whether most human infections have resulted from bites from the primarily bird-feeding *Culex* mosquitoes or from bridge vector mosquitoes in other mosquito genera.[6,16,18] However, WNV detection in *Culex* mosquitoes has almost invariably predated detection in other mosquito genera in areas with epidemic transmission of WNV.[9,16] It is likely that as WNV moves into new geographic regions, the first mosquitoes infected will be those that feed primarily on birds, with mosquitoes having broader host feeding habits (to include feeding on mammals) becoming infected in large numbers only later in the epidemic/epizootic. Between periods of epidemic WNV transmission, it might be expected that WNV would only be detected in the *Culex* mosquitoes involved in the enzootic maintenance of this virus.

Military installations that are located in geographic areas with expected epidemic transmission of WNV should focus surveillance efforts on both bird-feeding Culex mosquitoes and putative bridge vector mosquitoes (*Aedes* and *Culiseta*



(●) Participating military installations. Installations with WNV positive mosquito pools in 2003 (□) and 2004 (▲).

Fig 8. Military installations that submitted mosquitoes to the Entomological Sciences Division of USACHPPM-South for WNV testing during 2003-2004.

State	Installation	2003 Mosquitoes Tested [1,2]	2003 WNV Positive Pools [3]	2004 Mosquitoes Tested	2004 WNV Positive Pools
Alabama	Anniston Army Depot	52		NS	
	Fort Rucker	264		8	
	Redstone Arsenal	8,688		5,529	
Arizona	Davis-Monthan AFB	NS		18	
Arkansas	Pine Bluff Arsenal	314		42	
California	Beale AFB	NS		60	
	Edwards AFB	NS		23	
Colorado	Buckley AFB	NS		36	
	Peterson AFB	NS		19	
Delaware	Dover AFB	NS		116	
Florida	Jacksonville NAS	220		NS	
	Mayport NAS	4,918		5,880	
	Panama City CSS	13		NS	
	Pensacola NAS	359	2	397	
	Whiting Field NAS	213		144	
Georgia	Athens NSCS	NS		8	
	Atlanta NAS	208		330	
	Camp Merrill	NS		8	
	Fort Benning	2,555		1,001	
	Fort Gillem	2,661		1,577	1
	Fort Gordon	4,576		539	
	Fort McPherson	1,574		701	
	Fort Stewart	3,154		2,472	
	Moody AFB	2,969		35	
Idaho	Mountain Home AFB	NS		220	
Kentucky	Fort Campbell	825		311	
Louisiana	Fort Polk	6,537	[5]	3,621	
Mississippi	Camp Shelby	NS		5	
	Meridian NAS	NS		163	
New Jersey	McGuire AFB	NS		147	
New Mexico	Holloman AFB	NS		67	
North Dakota	Grand Forks AFB	NS		37	
	Minot AFB	NS		597	
Oklahoma	Altus AFB	NS		52	
	Fort Sill	NS		426	
	McAlester APP	NS		21	
South Carolina	Charleston NWS	82		767	
	Fort Jackson	2,174		6	
	Parris Island MCRD	1,437		202	
South Dakota	Ellsworth AFB	NS		549	
Tennessee	Arnold AFB	NS		1	
	Midsouth NSA	279		1,132	
Texas	Fort Hood	NS	[2]	5,223	
	Fort Sam Houston	NS		4,110	1
	Fort Worth NAS	NS		522	
	Goodfellow AFB	NS	[5]	521	1
	Randolph AFB	NS		73	
Honduras	Soto Cano Air Base	NS		111	
	Totals:	**44,072**	**14**	**38,595**	**5**

[1] AFB – Air Force Base, NAS – Naval Air Station, CSS – Coastal Systems Station, NSCS – Naval Supply Corps School, APP – Army Ammunition Plant, NWS – Naval Weapons Station, MCRD – Marine Corps Recruiting Depot, NSA – Naval Support Activity

[2] NS – Did not submit mosquito pools to USACHPPM-South for WNV testing.

[3] Numbers in brackets indicate mosquito pools with detectable WNV as determined by a laboratory other than USACHPPM-South.

Table 1. Number of mosquitoes submitted by military installations to USACHPPM-South for WNV testing during 2003 and 2004.

Mosquito Species	(pools positive)	(pools positive)
Aedes aegypti (Linnaeus)	-	9
Aedes albopictus (Skuse)	1,003	1,216
Aedes atlanticus/tormentor	380	907
Aedes c. canadensis (Theobald)	1,248	153
Aedes infirmatus (Dyar & Knab)	683	42
Aedes sollicitans (Walkeri)	71	282
Aedes sticticus (Meigen)	703	452
Aedes taeniorhynchus (Wiedemann)	1,223	1,081
Aedes thibaulti (Dyar & Knab)	142	246
Aedes triseriatus (Say)	1,145	111
Aedes trivittatus (Coquillett)	617	416
Aedes vexans (Meigen)	14,588	7,775
Aedes species	1,740	1,380
Anopheles crucians Wiedemann	2,278	914
Anopheles punctipennis (Say)	788	816
Anopheles quadrimaculatus Say	286	401
Anopheles species	229	46
Coquillettidia perturbans (Walker)	669	852
Culiseta inornata (Williston)	2	75
Culiseta melanura (Coquillett)	1,607	395
Culiseta species	32	11
Culex coronator (Dyar & Knab)	-	2,613
Culex erraticus (Dyar & Knab)	4,110	2,283
Culex nigripalpus Theobald	681	1,069
Culex pipiens Linnaeus	-	43
Culex quinquefasciatus Say	2,013 **(1)**	3,212 **(3)**
Culex restuans Theobald	790 **(1)**	165
Culex salinarius Coquillett	3,398	2,950
Culex tarsalis Coquillet	603	2,606 **(2)**
Mansonia titillans (Walker)	37	-
Orthopodomyia species	3	3
Psorophora ciliata (Fabricius)	75	65
Psorophora columbiae (Dyar & Knab)	490	637
Psorophora cyanescens (Coquillett)	17	217
Psorophora ferox (von Humbolt)	840	611
Psorophora howardii Coquillett	60	9
Psorophora species	84	176
Uranotaenia sapphirina (Osten Sacken)	92	24

Table 2. Number of mosquitoes by species submitted in 2003 and 2004 to USACHPPM-South for WNV testing.

mosquitoes) as mosquito vectors may differ by geographic region, while those installations where WNV is being maintained in an enzootic cycle, should focus surveillance efforts on known enzootic mosquitoes (*Cx. pipiens, Cx quinquefasciatus, Cx. restuans, and Cx. tarsalis*) with an increase in the surveillance system, to include putative bridge vectors in the event that WNV is detected in enzootic mosquitoes, dead birds, or other indicators of active WNV transmission.[7]

WNV positive *Cx. quinquefasciatus* and *Cx. restuans* were collected in 2003 from Pensacola Naval Air Station using CDC-style CO_2-baited suction traps, while in 2004, WNV positive Cx. tarsalis were collected using a Mosquito Magnet with octenol at Minot Air Force Base, and WNV positive *Cx. quinquefasciatus* were collected using gravid traps at Fort Gillem, Goodfellow Air Force Base, and Fort Sam Houston. Traps utilized in a mosquito surveillance program should be chosen dependent upon the mosquito species being targeted for surveillance. Gravid traps are effective for collection of *Cx. pipiens, Cx. quinquefasciatus,* and *Cx. restuans*, while *Cx. tarsalis* is best captured using a CO_2-baited suction trap.[9,19] Many of the putative WNV bridge vector mosquito species can also be captured using CO2-baited suction traps operated during periods of active host-seeking by these mosquito species.[20]

The increased detection of WNV positive mosquito pools during 2004 was due, in part, to the expansion of the mosquito testing program conducted by USACHPPM-South during 2004, to include Army installations in TX, as well as a number of Air Force installations throughout the United States (Table 1). Some military installations that participated in the WNV surveillance program of USACHPPM-South during 2004, submitted mosquito pools for WNV testing to other military or civilian laboratories in 2003 with the following results: Goodfellow Air Force Base had five WNV positive pools of *Culex* spp. collected on 13, 20, 21 (2 pools), and 27 Aug; Fort Hood had two WNV positive pools of Culex spp. collected on 8 and 15 Jul; and Fort Polk had three WNV positive pools of *Anopheles quadrimaculatus* Say collected on 9 May, 11 Jun, and 11 Jul, one WNV positive pool of *Anopheles spp.* collected on 19 May, and one WNV positive pool of *Aedes spp.* collected on 17 Jun.

Positive results of WNV infection in submitted mosquito pools were rapidly communicated to supported military installations to permit pest management personnel to quickly respond with timely and appropriate measures to reduce mosquito populations and implement public education programs to limit human contact with potentially infected mosquitoes.

The continuation of this effort by all military installation preventive medicine personnel and USACHPPM is critical in reducing the risk of WNV transmission to military personnel, military families, and DoD civilians and will help determine whether changes in WNV transmission are due to changes in mosquito abundance or geographic distribution.

Avian Surveillance: Dead bird surveillance to detect WNV was conducted by eight military installations in 2003 and four in 2004, with total dead bird submissions numbering 28 and 10, respectively. The WNV positive dead birds were collected during 2003 from Fort Sill, OK, on 24 Jul and 1, 8, 18, and 26 Aug; and during 2004 from Fort McPherson, GA, on 11 Aug and 14 Sep, and Fort Polk, LA, on 13 Jul

and 8 Nov. Dead birds were negative for WNV during 2003 from Fort Stewart, Fort Gordon, Redstone Arsenal, and Fort Sam Houston; and during 2004 from Fort Sill and Fort Sam Houston.

In 2002, the detection of WNV-infected dead birds was the first positive surveillance event in 61% of United States counties reporting WNV activity, and predated human illness in 72% of counties that reported human illness.[7] Dead birds provided the first and only indication of WNV activity at four military installations participating in this program. The DoD community at each installation should be encouraged to continue submitting dead birds for WNV testing.

Sentinel chickens at Fort Polk, LA, developed antibodies to WNV during 2003 on 15 Aug, 5 Sep, and 8 Oct; and during 2004 on 12 and 27 Aug. The identification of WNV in sentinel chickens at Fort Polk occurred 3 months after the first WNV positive mosquitoes were collected in 2003, and 1 month after the first WNV positive dead birds were collected in 2004. Thus, at Fort Polk, mosquito and dead bird surveillance provided an earlier indication of WNV activity compared to the use of sentinel chickens. However, the use of sentinel chickens did prove valuable in 2004 by providing an indication of local WNV activity in the absence of any WNV positive mosquitoes.

Human Case Surveillance: There has been a general reduction in WNV human infections in the southeastern United States from 2003 to 2004 as the virus has continued to spread westward.[12] Presumably, this reflects the loss of WNV susceptible endemic hosts in this region following the initial arrival and subsequent epizootic transmission of WNV. During 2003-2004, there was only one WNV human infection at a participating military installation. A 76-year-old female dependent of a retiree admitted to the Eisenhower Army Medical Center at Fort Gordon, GA, on 3 Oct 04, was subsequently diagnosed with neuroinvasive WNV disease and expired on 9 Nov 04. Prior to her death, the patient recalled being bitten by mosquitoes at her home during the evening hours. Nevertheless, human infections with WNV do continue to occur in areas where WNV activity appears to have been reduced following an initial outbreak, and surveillance programs must continue, in order to recognize elevated risk for further human infections either due to local outbreak or area-wide resurgence of the virus.

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